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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
SINCE 1901

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TELEPHONE TRAINING

The Illinois Telephone Association is sponsoring a Teletrainer Program in Illinois schools. Here is Chellis Emmons using telephone training unit in one of his classes. Story, page 32.

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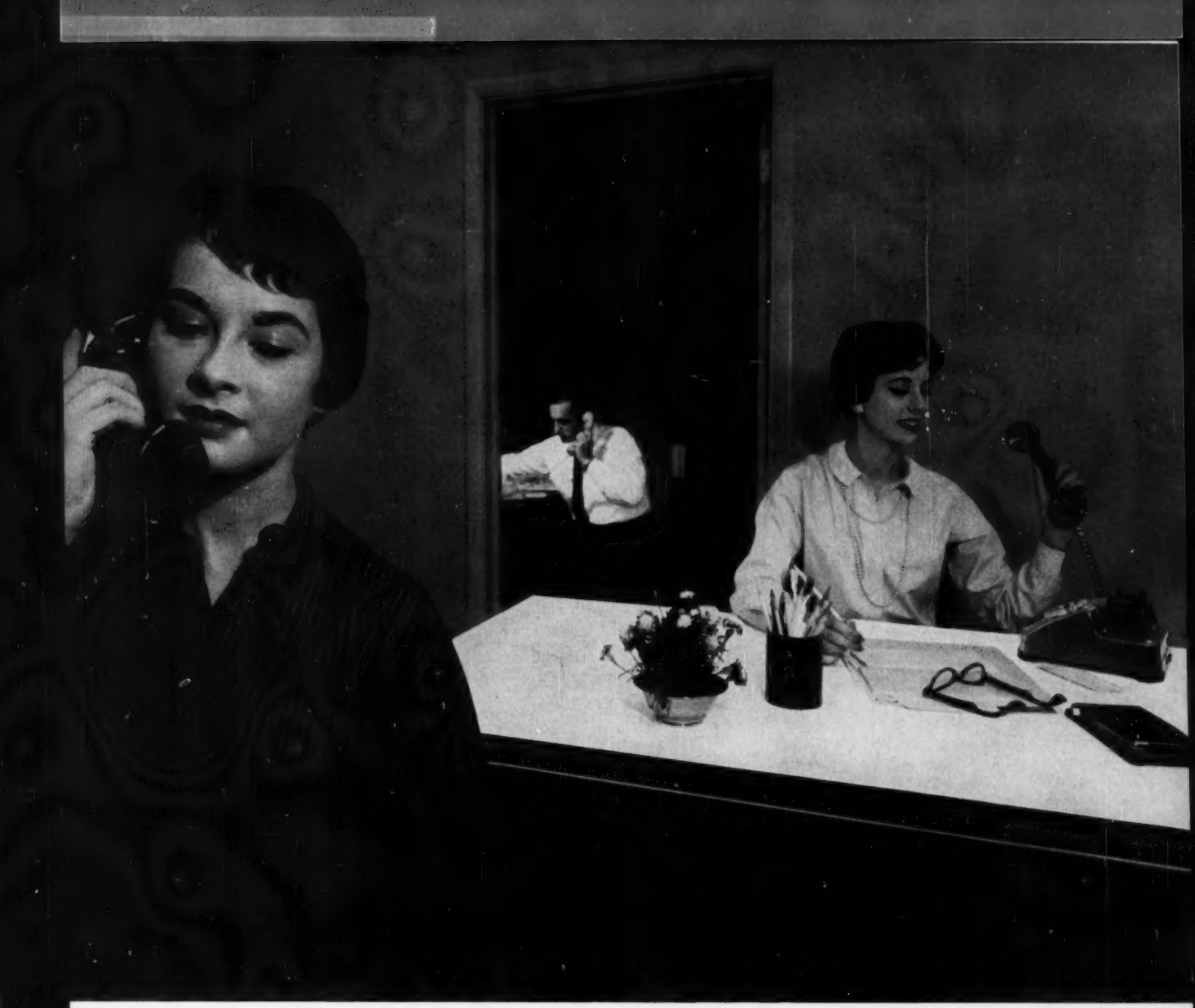

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FLASHES AND PLUGS

BED, BOOTH AND BROOM. A vacationer at Carolina Beach, N. C., interpreted southern hospitality literally—he made himself at home.

He set up housekeeping in a telephone booth on a pier. He installed a small oil stove, with fry pan; bought cooking oil, eggs, and cheese. Outside, he neatly propped an old broom against the booth.

The city manager learned that the visitor, having been denied cooking privileges in a rooming house, had taken to the beach to prepare his meals. When sand blew into his food, he moved into the booth.

The police, after requesting that the stranger sweep out the booth, got him a room *with* cooking facilities.

•

TALKATIVE TEENS. From the myriad of interviews and surveys about telephone usage habits, an interesting look into the teen-age telephone situation has been reported.

The Youth Research Institute is the group brave enough to bare the mystic habits of a "teen on the tel." Their basic conclusion is that the United States doesn't have enough telephones. Even though this country has more telephones than the rest of the world combined, they claim the average teen-age girl is discriminated against because in many cases she hasn't a telephone of her own.

This study indicates that three out of 10 girls between the ages of 15 and 18 have a "burning desire" for a private telephone. A private telephone was listed by 38 per cent as the gift they would most like to receive.

The interest in the teen-age telephone is apparent when you consider that 50 per cent say they talk about an hour a day on the telephone. Weekends are even busier, as 65 per cent lay claim to two hours a day.

Another survey along the same line in Cedar Rapids bears out these national figures. It seems that ninth-graders at both Franklin and Roosevelt schools spend more than six hours each week on the telephone, while the Franklin eighth graders are the least talkative . . . with an average of 1.79 hours per week.

Got a teen? Better get another "tel."—*Northwestern Bell magazine.*

•

RIGHT? RIGHT. Sammy Davis Jr., an entertainer, has formed a partnership called "Phone Call, Inc." Davis and his new partner, Abby Greshler, used to discuss starting a firm to produce a movie. Each discussion ended: "Let's call each other when we get the right story."

Greshler called Davis in New York one day not long ago and said, "This is the phone call—I've found the right story."

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Since 1901

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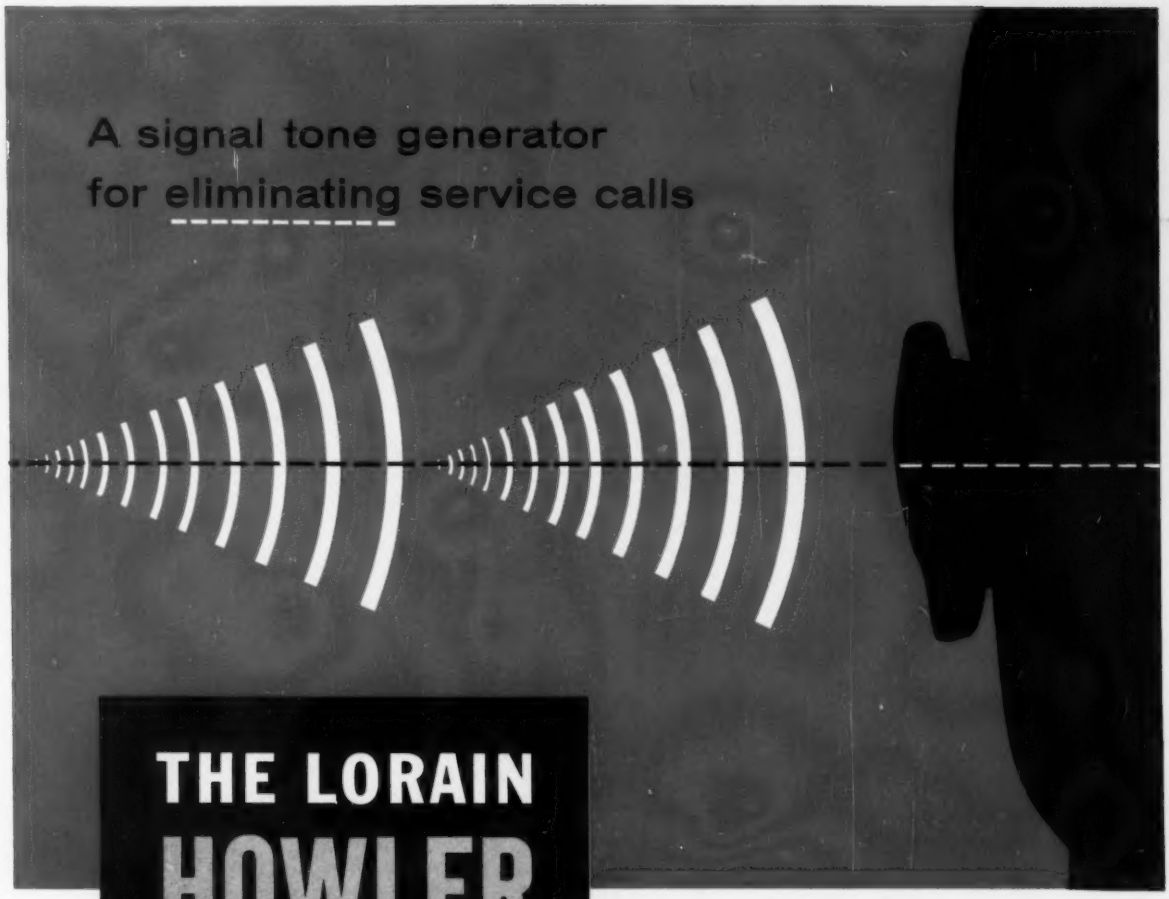

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Write for Bulletin 167A

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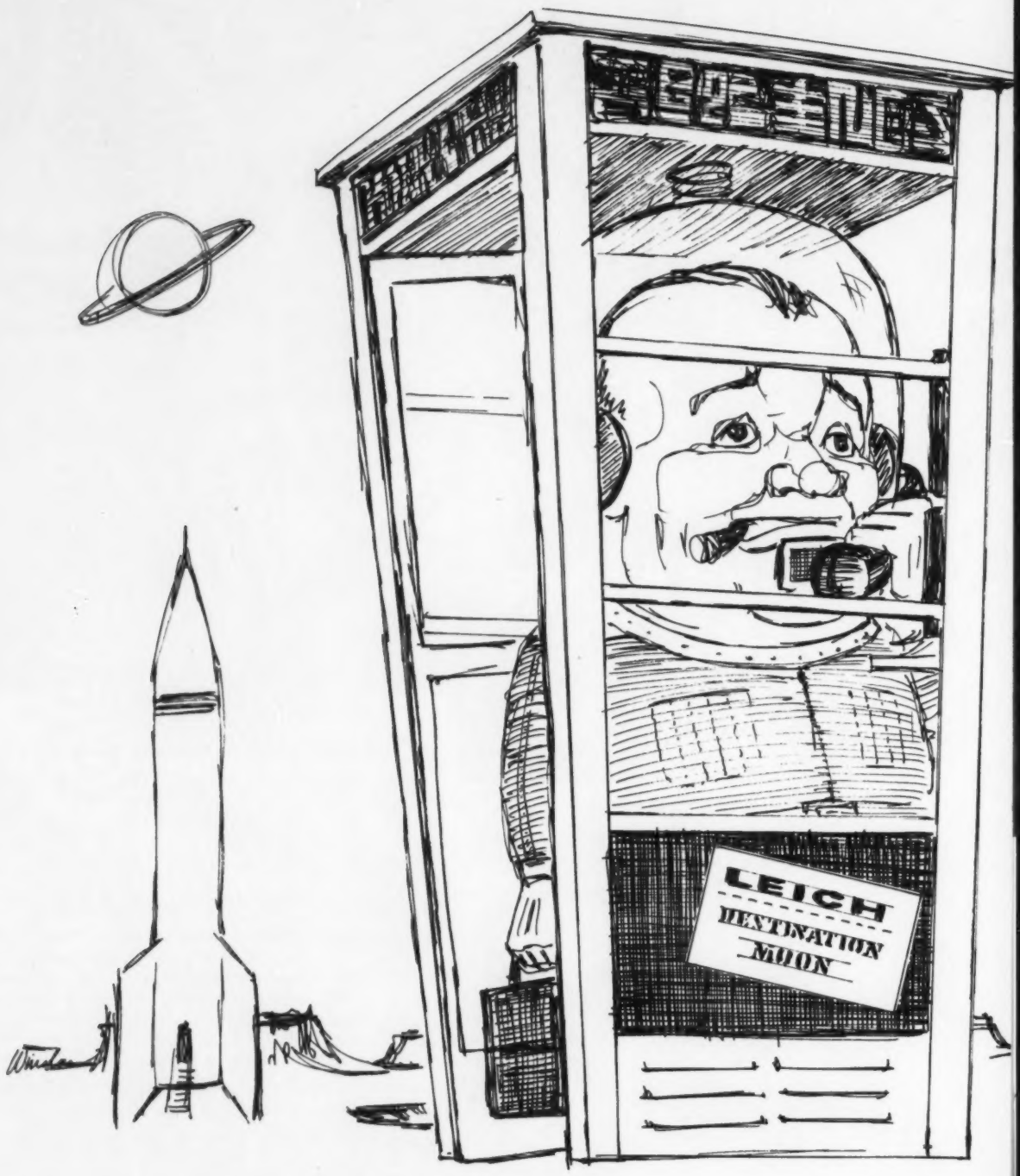

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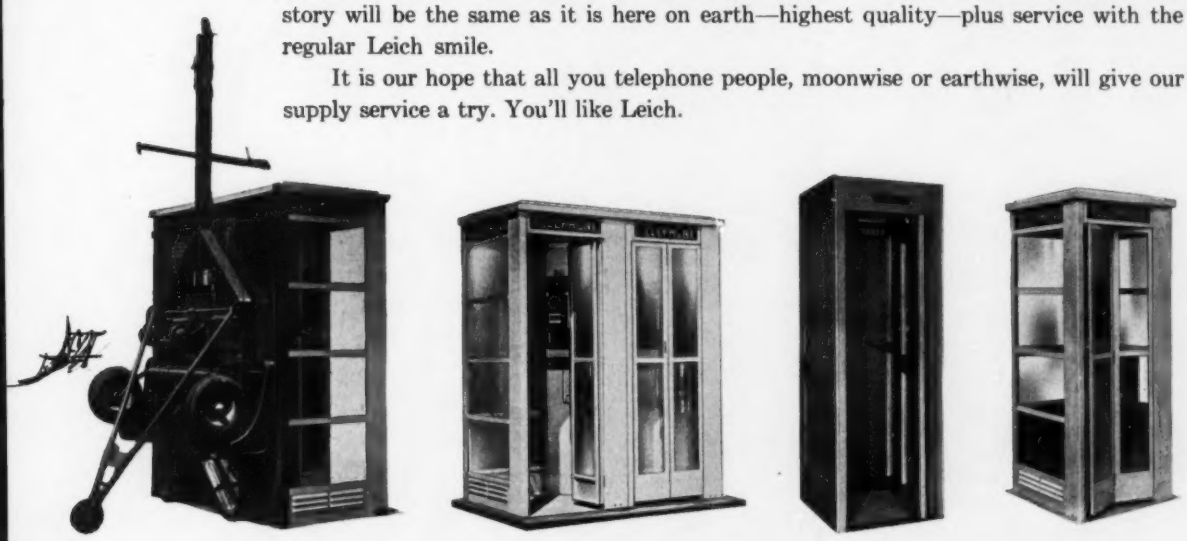

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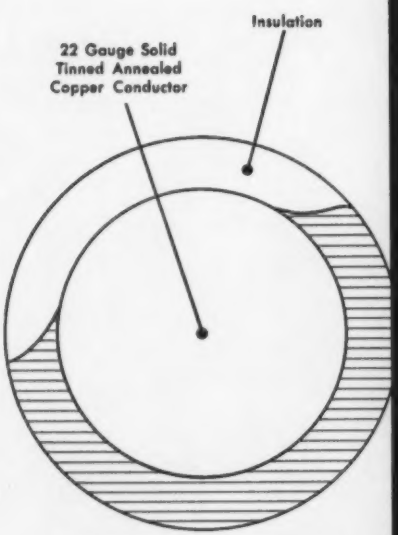

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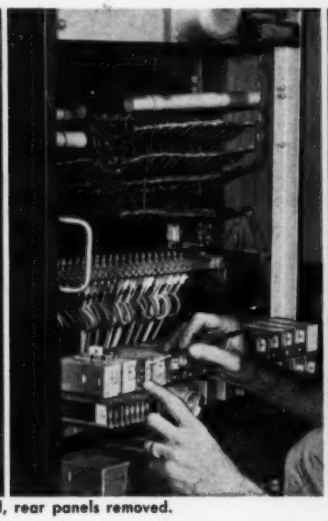

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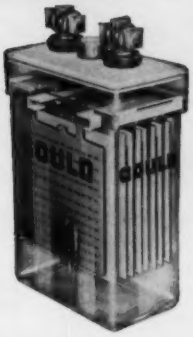

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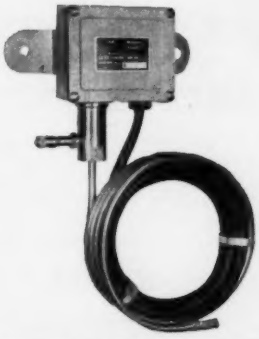

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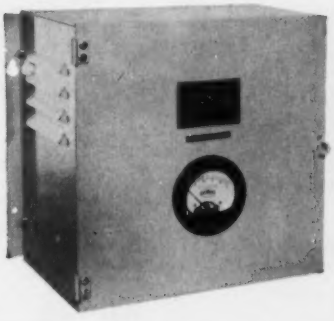

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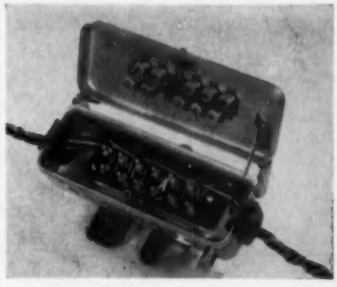

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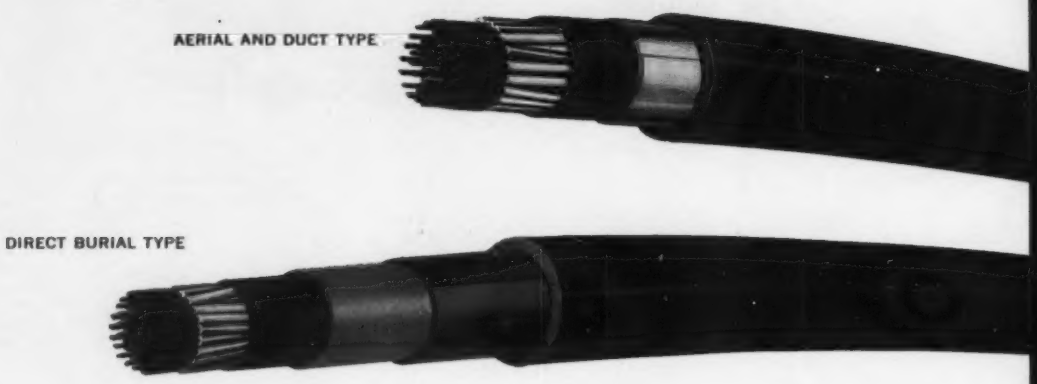

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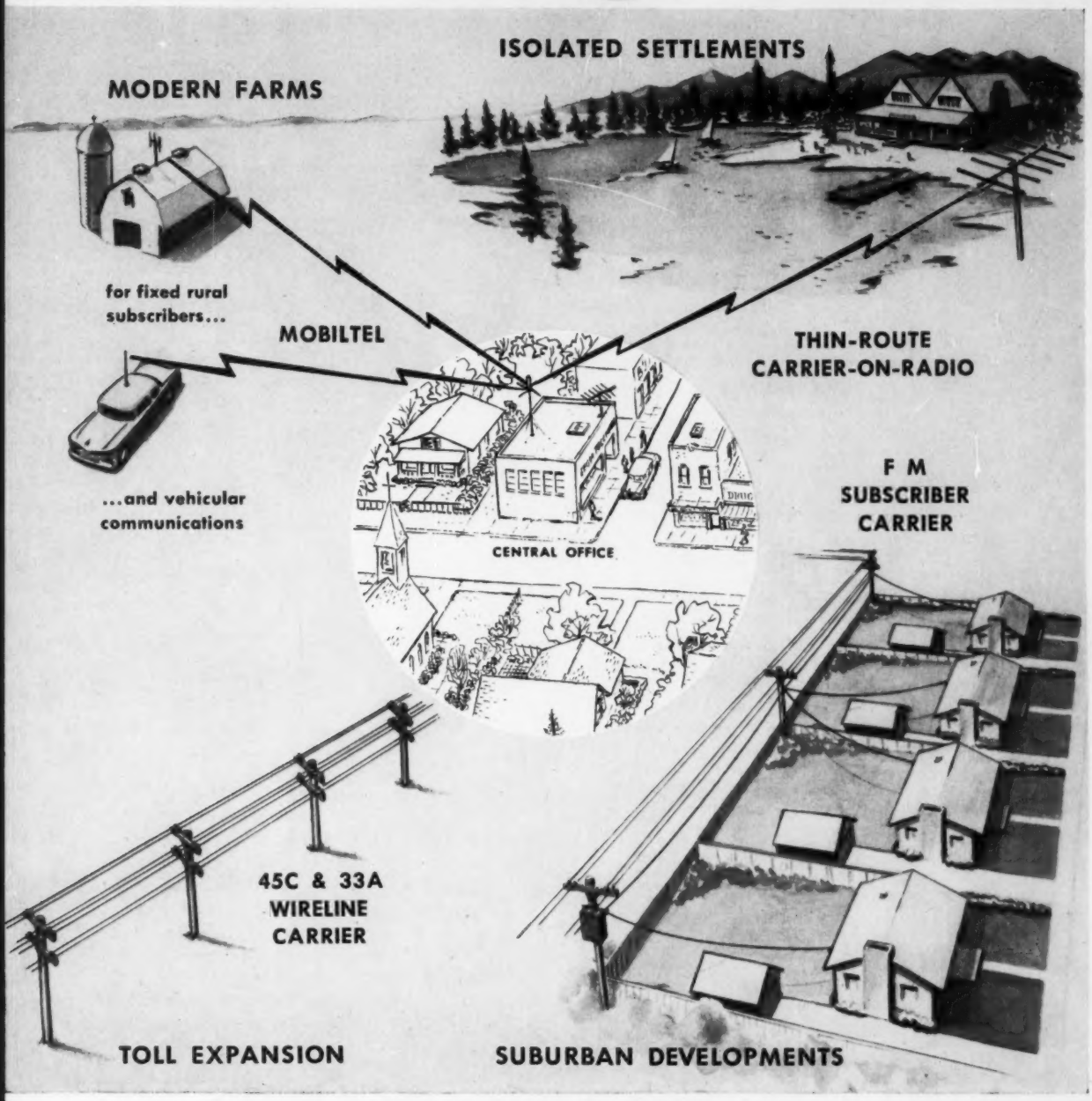

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

U. S. Supreme Court upholds conviction of two men for conspiring to blow up telephone plant in 1955 CWA strike against Southern Bell. High court also dismisses appeal from California Supreme Court upholding right of state commission to grant interim rate increases without formal notice or hearings. FCC continues hearings on radio frequency allocations.

THE U. S. Supreme Court has written the final chapter to the conviction of two telephone cable dynamiters for criminal conspiracy growing out of a telephone strike violence in 1955. By the close division of 6 to 3, the highest court on Mar. 30 decided that Louis J. Abbate and Michael L. Falcone were properly convicted of conspiring to blow up Southern Bell Telephone & Telegraph lines in Jackson, Miss., during the strike called by the Communications Workers of America (CWA) during that period.

The reason for the close vote of the court did not involve any question of doubt about the responsibility of the defendants for the criminal activities of which they were accused, but the rather interesting constitutional question of whether they could be convicted *twice*, for the same action, in both state and federal courts, respectively. The U. S. Supreme Court majority said both convictions were proper and not in violation of the constitutional guaranty against "double jeopardy." Dissenting Justices Black and Douglas joined by Chief Justice Warren held otherwise.

The constitutional protection against "double jeopardy" is contained in the Fifth Amendment of the Bill of Rights, which reads, in part:

". . . nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb . . ."

What made this case somewhat complicated was the fact that, while Abbate and Falcone were convicted in both state and federal court for offenses growing out of the same criminal acts of strike violence, the offenses charged were entirely different.

Under the state conviction, they were charged with criminal conspiracy to destroy the private property of the telephone company. This is punishable under Illinois law. And, since the alleged conspiracy took place in Chicago, the defendants were first prosecuted in Cook County (Ill.) Criminal Court. They pleaded guilty and got off with a comparatively light sentence of "not more than three months."

But, it appeared that some of the leased lines or other facilities destroyed by the dynamiting were controlled by the U. S. Government. This is a federal offense. So, Abbatte and Falcone were again indicted, this time by a federal grand jury in Biloxi, Miss. They were again convicted and Abbate got three years and $1,000 fine, while Falcone drew a year's imprisonment.

An appeal was taken on grounds of "double jeopardy," but the Fifth U. S. Circuit Court of Appeals upheld the conviction. The appeals court, at this point of the case did reverse the conviction of two others accused of the conspiracy: James Shelby, then international representative of the CWA, and Charles Perry, then president of the Jackson local union.

Justice Brennan, writing the majority decision for the U. S. Supreme Court, upheld the appellate court. He pointed out that federal law enforcement would be crippled if state verdicts were used to foreclose any future action. The federal government attorney, Leonard B. Sand, had hammered hard on this theme and brought out a rather interesting development which could result if federal prosecution under federal laws could be barred by any prior prosecution under state laws, however ineffectual.

Suppose, in an entirely different type of controversy, some white segregationists were accused in a southern state of racial violence. By simply trying and acquitting such defendants, or letting them off with very light punishment, southern state courts could prevent any further federal prosecution under any Civil Rights Law the federal Congress might enact.

This was a very challenging argument. It apparently impressed the majority of the court; but not the three dissenters. In another similar "double jeopardy" case decided the same day, involving a Cicero, Ill., bank robbery in 1953, a state conviction was upheld by an even narrower majority—5 to 4. In that case, however, the federal prosecutors had failed to get a prior conviction.

California Rate Appeals Denied

Is it proper for a state regulatory commission to grant a so-called "interim increase" to a telephone company without going through the full-dress procedure of notice, hearing, and so forth? The U. S. Supreme Court, in a decision on Mar. 23, dismissed an appeal from the California Supreme Court which upheld the right of the California commission to grant so-called "interim increases" to a number of telephone companies in that state without formal notice or hearings. The U. S. Supreme Court did not pass

on the merits of the case, but simply said that there was no "substantial federal question" which would warrant the highest court reviewing the action of the state court.

Although this issue may depend on the exact wording of different state laws, the California court ruling does now grant authority to the public utilities commission of that state to give companies a certain measure of prompt rate relief, pending a final decision on rate increase applications. The companies involved in these appeals — which were taken by the cities of Los Angeles and Long Beach—were Pacific Telephone & Telegraph Co., General Telephone Co. of California, Sunland-Tujunga Telephone Co., and California Water & Telephone Co.

Mr. Justice Black preserved his almost perfect record for voting against utility company interests in major contested cases by dissenting from the action of the other Justices of the court. He thought that the U. S. Supreme Court should have reviewed the whole question.

These California rate cases were started in 1957 with the filing of rate increase applications. But, while the hearings were still in process, Pacific Telephone & Telegraph Co. moved for an "interim rate increase" on grounds that some measure of rate relief was needed right away without further delay. The Independent telephone companies joined in this plea, and the commission agreed.

Lawyers for Los Angeles and Long Beach thereupon contended that this subsequent move, by the telephone companies, amounted to practically a new case in which all parties should be entitled to notice and opportunities to be heard, etc. But, the California commission disagreed, pointing out that rate regulation is a legislative and not a judicial function. So the commission may act at any time it feels it should do so, without violating anybody's constitutional right by the procedure it uses. The commission stated in that case:

". . . Individual citizens could not properly claim that they were constitutionally guaranteed notice or hearing when their own representatives enacted laws fixing or increasing rates. When regulatory commissions came into being as agents of the state, they continued to perform a legislative function in the same area."

FCC Radio Frequency Hearings

The Federal Communications Commission is going ahead with the taking of testimony in so-called "Docket No. 11997." This case involves an inquiry into the allocation of radio frequencies to various non-governmental services in the radio spectrum between 25 megacycles and 890 megacycles. Late in March, the testimony of three witnesses for the Bell System was submitted for the record. They include a considerable amount of material of interest to all telephone companies and others concerned with radio frequency allocations in this range of the spectrum. Bell System witnesses included John J. Hanselman, assistant vice president of the American Telephone & Telegraph Co.; Robert Bright, mobile radio engineer for AT&T; Harold R. Huntley, AT&T chief engineer, and Paul W. Blye, director of systems engineering of Bell Telephone Laboratories.

Mr. Hanselman testified about the important role mobile radio-telephone service plays in our nationwide communications. He said the Bell System companies are now furnishing mobile service to about 17,000 motor vehicles, and that is only a fraction of the total potential users. He pointed out, however, that it is neither technically nor economically sound to attempt to expand this service on a piecemeal basis within the frequency bands now available.

Hanselman described the different types of public mobile service, including signaling service (commonly called paging service), dispatch service whereby the person in one mobile unit can talk with any other mobile or exchange telephone customer. He reviewed the different customers for such services: Ambulance, physicians, police and fire, gas, electric, and water utilities, burglar and other protective service, and various types of business enterprise requiring contact with mobile unit for efficient operations. He gave some estimate of future requirements, based on rapidly increasing automobile registration, and urged a prompt decision by the FCC.

With reference to the role of the telephone company in meeting mobile telephone needs, Hanselman pointed out that mobile service is a natural extension of exchange and toll service. He referred to the coordinated and concentrated responsibility for this type of service which can only be afforded by telephone companies. He concluded:

". . . it cannot be emphasized too strongly that a great expansion of public mobile telephone service is in the public interest. It would provide for the first time adequate communication service to people on the move, it would expand investment and job opportunities throughout the electronics industry, it would strengthen our communication resources in time of national emergency. The commission is strongly urged to allocate sufficient frequencies to the land-line telephone companies to make possible the establishment of a truly adequate nationwide public mobile telephone system."

Robert Bright's testimony described two recent special developments in Bell System mobile service: (1) The current trial of air-to-ground service in

(Please turn to page 51)

Recent Quotations of Independent Telephone Stock

	3/31/59 BID	3/31/59 ASKED	2/26/59 BID	2/26/59 ASKED
Anglo-Canadian Telephone Co.	41¼	42¼	46	47
California Interstate Telephone Co.	15	15⅜	15⅜	15⅞
California Pacific Utilities Co.	36¼	36¾	36	36¾
California Water & Telephone Co.	27¾	28¼	26½	26⅞
Carolina Telephone & Telegraph Co.	160 Bid		159 Bid	
Central Telephone Co.	25½	26	26¼	26¾
Chenango & Unadilla Telephone Corp.	25	26	25	26½
Cincinnati & Suburban Bell Telephone Co.	99½	101	95	96
Commonwealth Telephone Co.	19¾	20½	20	20¾
Florida Telephone Corp. Class A.	29¼	30	29	29¾
General Telephone Corp. Common	65 (Last Sale)		66 (Last Sale)	
Indiana Telephone Corp.	17	18½	17	18½
Inter-County Telephone & Telegraph Co.	63	66	58	62
Inter-Mountain Telephone Co.	14½	15	15⅜	15⅞
Lincoln Telephone & Telegraph Co.	56½ Bid		56½ Bid	
Middle States Telephone Co. of Illinois	24	25	24½	25½
North Carolina Telephone Co.	2⅛	2⅜	2	2.10
Northern Ohio Telephone Co.	45	47	44	46
Peoples Telephone Co.	90 Bid		92 Bid	
Rochester Telephone Corp.	27¾ (Last Sale)		25¾	26⅛
Southern Nevada Telephone Co.	22½	23½	22¼	23¼
Southern New England Telephone Co.	44¼	44¾	44¼	45
Southwestern States Telephone Co.	26⅛	26½	25¾	26¼
Telephone Service Co. of Ohio Class A.	130	140	130	140
Tidewater Telephone Co.	23½	25	24½	26
United Utilities, Inc.	33⅜	33¾	32¼	32¾
West Coast Telephone Co.	25¼	25¾	24⅛	24½
Western Light & Telephone Co., Inc.	40½	41¼	40¾	41½

(Quotations supplied by Merrill Lynch, Pierce, Fenner & Smith)

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

THE NEW Information Center of the Indiana Bell in Indianapolis numbers 58 positions that handle over 30,000 information calls daily. The operators' positions are separated by plastic wings which provide considerable privacy for each operator.

Outstanding among the modern features of the new information center are the three mechanical brains—"call distributing units"—that distribute the calls evenly among the operators at various positions.

Operators are not required to "plug in" to answer calls. Instead, the call automatically goes into her headset with a "beep beep" tone and a green light informs her that her headset is connected to the party desiring information. Both of her hands are free to turn through the records before her to look up information requested. If business is brisk, a red light signals that another customer is waiting.

If traffic becomes congested, such as during a flood or any other emergency, a master control panel permits several positions to be placed in service to specialize in handling the waiting calls. Six lamp cabinets in various sections of the office indicate at a glance the flow of calls through the office.

It is stated that an information operator can answer about 100 calls per hour. Operators memorize as many as 20 or 30 numbers in the category of "most frequently requested." The average call for "information" is about 30 seconds in length. This time is usually reduced by half when the operator quotes the desired number from memory.

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With the increase in vandalism and the wrecking of outdoor type paystation telephones, it is a pleasure to note that one manufacturer is doing something about it. The paystation coin box, and its associated parts, have been redesigned. It is now much more difficult for any one but authorized personnel to get at the coins in the box.

The housing and coin-box door are now constructed of heavier gauge steel and case-hardened. The door was made smaller and fitted so closely in the housing that it is impossible to insert a prying tool between them. The area over the door has been redesigned to eliminate the slope which formerly facilitated the use of a prying tool. The top and sides of the door frame have also been reinforced with a "U-bar," arc-welded in place. This bar extends over the door opening, to serve as a doorstop.

The lock bracket has been reinforced, and is electrically welded to the door, making a single unit of great rigidity. Two other points of weakness have been corrected: the lock-mounting holes were lowered to incorporate greater resistance to prying; and a fillet was added along the top and sides of the door.

To minimize the possibility of drilling or driving it out, the lock is completely covered by the hardened steel door—with the exception of the arc required for turning the key. Any attempt to drill the lock will almost certainly result in breaking the drill.

Before this new design was placed in production, it was tested on a Baldwin Universal Testing Machine, using a ram on the inside corner of the coin-box. It was learned that a force of 5,700 pounds was required to separate the door from the surrounding frame. It would be impossible for any person to apply such leverage to the door of a paystation in service, since the prying instrument would be required to have a razor-sharp edge, and this edge would break long before such a force could be exerted.

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The 1958 edition of "The World's Telephones," released early this year by AT&T, indicates that the United States averaged 460 conversations per person during 1957, but trailed the Canadian average of 497 and the Swedish conversation rate of 491.

Geographically, the most talkative telephone area was Alaska, our largest state, where each person averaged 581 conversations in 1957.

Little Iceland ranked high, with an average of 452 calls per person.

It is obvious that inhabitants of older climes avoid trips when possible to conduct business by telephone. In this connection, however, Hawaii proved to be an exception. This island state, with its balmy weather, reported 522 conversations per person.

The United States led the world with 63,621,000 telephones. Our nation's capital, with 70 telephones for each 100 population, showed the greatest development for world metropolitan areas.

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A supplement to "Inventions Wanted by the Armed Forces" has just been released by the U. S. Department of Commerce.

Included in a list of 82 new technical problems which the Armed Forces would like to have solved by civilian inventors are transistors which will operate satisfactorily in the HF, VHF and UHF at temperatures over 150° C., and a means for communicating over a wire line, even though the line is physically broken.

Both the supplement and original list may be obtained from the National Inventors Council, Department of Commerce, Washington 25, D. C.

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Freedom of speech has been defined as freedom to say what you please as long as you please enough people.

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It is claimed that civilized man does not eat his own kind, but he will skin him.

THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

CODES ARE familiar to traffic people since codes have been in use in the traffic department for many years. One of the newer codes is DDD (Direct Distance Dialing), which is here to stay. By this method, a long distance call can be completed in approximately 35 seconds, compared to the average of 72 seconds for operator-handled long distance calls.

In some instances, the mechanism selects a route and initiates the ringing in less time than it takes the person at the called telephone to answer the ring.

Amazing as it may seem, today 10 million long distance calls per week are being dialed by subscribers—a big "do it yourself" project.

The only difference between DDD and dialing a local call is that you dial three digits of the area you are calling, plus the desired number. For example, if you were calling a number in Dallas, Tex., you would dial its area number, 214, and then dial the desired number.

Immediately the mechanism would go to work; in fact it starts trying to find a route to the called point before you have dialed the local number. If the first route is busy, it tries an alternate route. Even in instances when the mechanism has difficulty in locating an idle route, it completes the job in approximately 12 seconds.

Today, DDD is confined to station calls but plans are under way to make it possible to use this method on person calls as well.

The other key DDD mechanism is the "automatic accountant." It is housed in a metal and glass container and resembles the interior of a typewriter turned upside down.

When a long distance call is dialed, it begins punching holes in tape, recording the calling number, the called number, the date, the start of conversation, and the disconnect time. The tape is fed into decoding machines which punch the data onto IBM cards. These, fed into other machines, cancel out uncompleted calls, compute the charges and federal tax, then print the charge on the subscriber's telephone bill.

While DDD is a marvelous development, it is by no means the ultimate in telephony. Many tests are under way at the present time which indicate that within a few years there will be many innovations in the completion of telephone calls, equipment, etc.

Instead of dialing, as we do today, we may be punching keys much like those on a 10-key adding machine. This will be a much faster method—five or six seconds to key an average number against 10 to 12 to dial it. The key method will result in many saved hours of line time.

Exchange names may be dropped and digits added. Your telephone number may then have seven digits instead of five.

One of the more amazing things will be your ability to secure many local numbers without dialing or keying. There will be an instrument that will do this. You will load it with the 50 numbers you call most frequently, and when you move an arrow to the one you wish, the instrument will dial it.

You may have heard about the "hands-free" telephone which will permit you to talk, while seated or moving about a room, without holding a receiver. What a boon this will be for people using a bedside telephone!

In the future, your telephone may have no bell. Instead you will hear the pleasanter sound of a tone-ringer. While the sound may seem softer, according to tests reported, it's easier to hear at greater distances.

To date there have been so many wonderful developments in the telephone industry, we might be prone to think we had reached the pinnacle of achievement. But, on the contrary, scientists, engineers and others interested in development and progress are constantly at work to reach even greater heights in developing ways and means of making telephone service better, faster and more pleasing to telephone subscribers. It will be of interest to all telephone folk to follow the progress and achievement of those responsible for the development of the telephone industry.

How Define Liberty?

The world has never had a good definition of the word liberty, and the American people, just now, are much in want of one. We all declare for liberty, but in using the same word we do not all mean the same thing. With some the word liberty may mean for each man to do as he pleases with himself, and the product of his labor; while with others the same word may mean for some men to do as they please with other men, and the product of other men's labor."
—ABRAHAM LINCOLN.

Traffic Questions

(1) How should the operator proceed when a local conference call is received?

(2) When an outward operator receives a call by address name, should she ask, "Do you know the number?"

(3) When the outward operator receives a call which the local operator can complete, that has been routed to long distance in error, how should the outward operator proceed?

(4) When may a charge be transferred to a third telephone?

(5) How should the outward operator proceed in recording a call charged to a third telephone?

Answers are presented on page 52

KEEPING UP WITH the latest developments

By RAY BLAIN

THIS IS the fourth article in a series of six in which our technical editorial director describes various new items of equipment of interest to telephone companies. The third article appeared in the Apr. 4 issue. Readers desiring additional information on any of the products described may write the manufacturers or TELEPHONY.

* * * *

Weather-Resistant Telephone. (Fig. 48). This assembly meets the demand for a standard "500" type wall telephone in a weather-resistant enclosure, suitable for outdoor use under normal weather conditions.

The Stromberg-Carlson telephone, equipped with a retractile neoprene cord, is mounted by three stand-offs in a heavy gauge cast aluminum casing with full-swinging door.

The enclosure has a screened vent on the under side and a detachable fitting threaded for ½ inch pipe for line entrance. This threaded opening is capped with a plastic insert, to be removed if piping is used, or punched if line wire is brought directly into the enclosure.

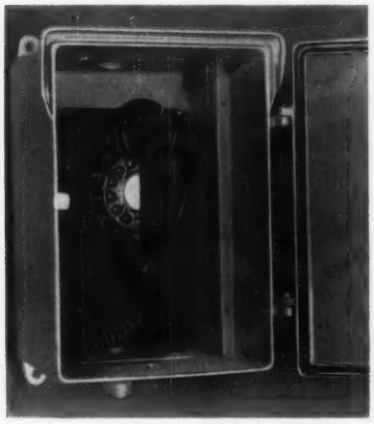

Fig. 48. Weather-resistant telephone.

On the roof, directly above, a detachable flat plate covers an alternate entrance-way so that the installer can bring in leads from either top or bottom and shift fittings as required.

Cork gaskets are used on all fittings, and a neoprene shield serves as shock absorber and seal for the door. A locking mechanism is available as an option when so ordered.

Lips of the casting are drilled for easy mounting with lag bolts. Grounding as deemed necessary will be made at the time of installation.

•

Visual Indicator for Pagemaster. (Fig. 49). The increasing demand for a visual, as well as an audio paging signal, for the Stromberg-Carlson Pagemaster selective radio-paging system has been met with the announcement that the Model TR-300L Pagemaster receiver, with an attached light, is now available as an optional feature.

Pagemaster selective paging is being used successfully in single and multi-building installations as well as for city-wide paging as an extension to normal telephone service. The necessity for visual indication did arise when hearing the audible tone became impossible in such areas as metal stamping, boiler making or woodworking factories.

This new model transistorized receiver will have a visual and an audible stage, both of which will be activated when its paging code is registered on the Encoder. The visual indication stage is in itself a transistorized, two-stage amplifier, utilizing a cascade connection of the two common collectors. This configuration was selected for its high current gain which permitted lighting the indicator lamp with a minimum energy requirement from the signal supplying stage. The transistors selected were those that would operate under all normal ambient temperature requirements.

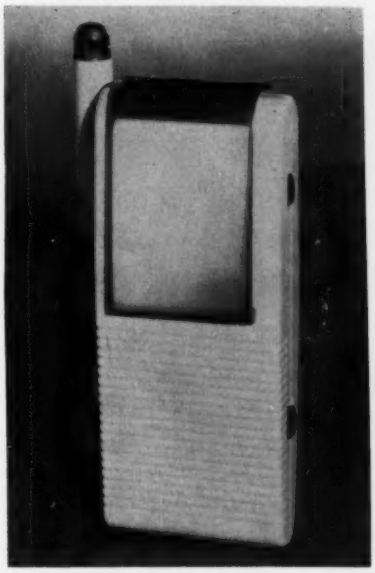

Fig. 49. Visual indicator for Pagemaster.

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One-Man Operated Trencher. (Fig. 50). This new medium-sized Arps trencher is designed for a wide variety of jobs including installation of telephone cable.

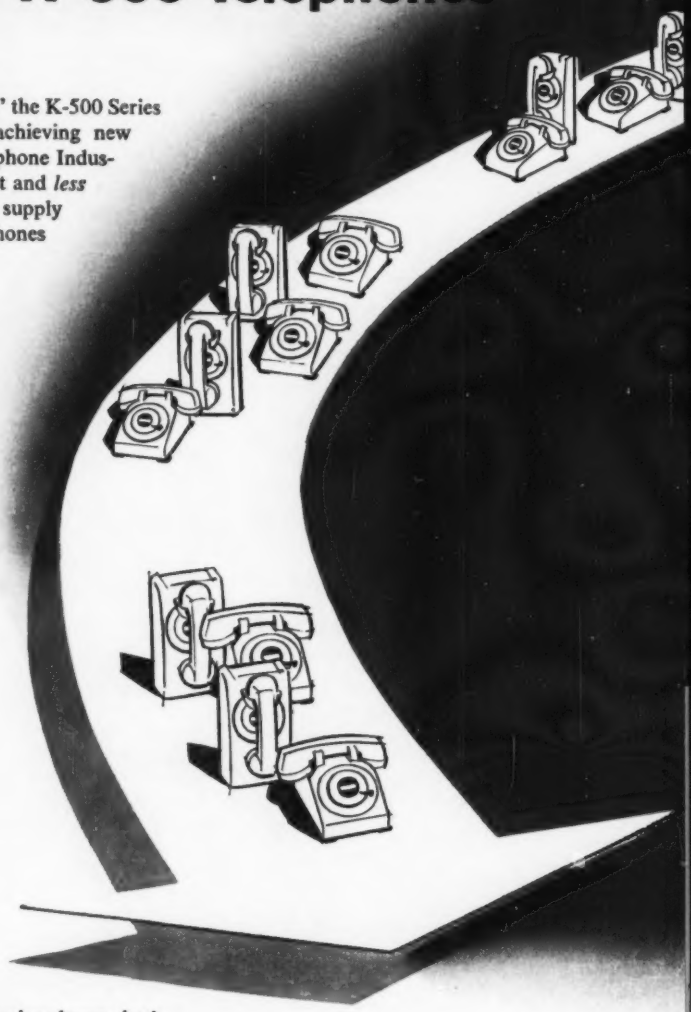
It may be transported for short distances under its own power at 2¾ miles per hour. For long distance moving, it can be easily skid-loaded on pickup trucks or small trailers.

This machine is capable of five digging widths—2¾ inch, 3½ inch, 4 inch, 6 inch and 8 inch, up to 54 inches deep. Digging speed is variable from 0 to

(Please turn to page 24)

Kellogg's Monthly Shipment

for Pace-Setting K-500 Telephones



Called "the ultimate in telephone engineering," the K-500 Series continues Kellogg's outstanding record of achieving new performance heights for the Independent Telephone Industry. And now it will be easier, more convenient and *less expensive than ever* for you to assure a steady supply of these often-imitated, never-equalled telephones for your growing subscriber needs.

HERE'S HOW THE PLAN WORKS:

Place your order now for your yearly telephone requirements with your nearest Kellogg warehouse. Each month, the number and type of telephones you require will be shipped to you. It's as simple as that.

HERE ARE THE PLAN'S ADVANTAGES:

You get the lowest price per phone, based on your *yearly* quantity order. You're assured fast on-time deliveries, via best possible methods, from your nearest Kellogg warehouse. You're freed from storage and inventory problems—record keeping and warehouse costs are minimized.

This monthly shipment plan applies to both the K-500 Series desk telephones and new K-544 wall phones. Technically, these are the most advanced instruments Kellogg has ever produced, setting new performance standards for the Independent Telephone Industry. And to meet ever-growing subscriber demands for *color* phones, both models are available in 15 bright new decorator colors!

Many companies are availing themselves of this plan. To place your order, or for more information, see your local Kellogg sales representative.

Demonstrate how the handset of the K-554 can be hung on the side without breaking the circuit!

KELLOGG
Communications Division of
ITT
CHICAGO, ILLINOIS

Kellogg Switchboard and Supply Company, 6650 South Cicero Avenue, Chicago 38, Illinois
Communications Division of International Telephone and Telegraph Corporation

Regional Offices and Warehouses:
CALIFORNIA: 23 Broderick Road, Burlingame, Calif., OXford 7-5780.
GEORGIA: 1594 Southland Circle, N. W., Atlanta 18, Ga., SYcamore 4-2441.
ILLINOIS: 4600 So. Tripp Ave., Chicago 32, Illinois, CLiffside 4-4300.
KANSAS: 7th & Sunshine Road, Kansas City 15, Kansas, MAyfair 1-4418.
MINNESOTA: 6100 Excelsior Blvd., Minneapolis 16, Minn., West 9-6715.
NEW YORK: 327 North West Street, Syracuse, N. Y., HArrison 2-9251
OHIO: 1555 West Fourth Street, Mansfield, Ohio, LAfayette 4-6511.
TEXAS: 1515 Turtle Creek Blvd., Dallas 7, Texas, RIverside 7-5191.
EXPORT: 167 Prospect Street, Passaic, N. J., PRescott 3-5100.

1,200 feet per hour in either direction. At the 2-foot depth, digging speed averages 250 feet per hour with an 8 inch width; a 4-foot depth produces 200 feet per hour at a 4 inch width.

Self-propelled, this trencher can be operated by one man. By moving a small lever, the hydraulic drive permits instantaneous reversal of direction while digging, making it possible to dig vertically alongside a wall. The hydraulic drive also affords quick speed changes throughout the entire digging range by turning a speed control handle. Other controls are the conveyor clutch, hydraulic drive clutch, power boom lift, and digging chain clutch. These controls are conveniently located for the operator.

Fig. 50. One-man operated trencher.

The following features are claimed for this trencher:

(1) A reversible rubber-belted conveyor to deposit the dirt to either the left or right of the trench.

(2) A hydraulic power boom lift permits fast raising and lowering of the boom, thus speeding up digging operations.

(3) New shielding provides complete protection for the operator and machine.

(4) An indicator on the front of the machine for following guide lines when digging foundation trenches.

(5) Optional rear dual wheels provides extra traction and flotation in muddy soils.

Other features of the trencher include: Cutters made of high carbon steel, heat-treated steel; ball, roller or needle type bearings utilized at all points of high speed or heavy load—sealed to keep out dirt, and box-type, heavy steel frame to withstand severe use.

•

Trencher. (Fig. 51). This Stampings, Inc. trencher weighs only 232 pounds and can be transported to jobs of 100 feet or less as well as longer jobs. It can be operated by one man.

The machine digs a 3 inch wide trench from 1 inch to 24 inches deep, or 4 inches wide, 18 inches deep. It digs 1½ to 17 feet per minute, depending on soil conditions. All moving parts, with the exception of the wheels, are equipped with sealed ball bearings. The wheels are equipped with zerk fittings which would require greasing perhaps once a season.

The trencher is powered by a 2¾ h.p. Briggs and Stratton, four-cycle, 4,000 rpm gas engine. The drive is through a 6-to-1 gear reducer.

•

Rubber-Tired Ditcher. (Fig. 52). This Barber-Greene rubber-tired ditcher was designed for narrow trenching in the fields of underground placement of telephone and other communications systems.

Designed to dig a maximum of 40 inches deep, the ditcher may be equipped with either a chisel tooth bucket line digging either 3 or 5 inches wide; or a hook-tooth line digging 3½ or 5 inches wide. This choice of bucket lines makes the machine readily adaptable to a wide variety of underground soil conditions.

The ditcher has special heads aft and boom support bearings; a new large radius boom foot-end with an optional foot-sprocket for extremely tough digging. A new positive boom hoist lock makes for more positive maintenance of grade at any selected digging depth. Also, the boom take-up, for adjusting the slack in the bucket line, has been made more readily accessible.

Fig. 52. Rubber-tired trencher.

A follow-up scraper may also be furnished as an optional accessory to insure a cleaner trench with minimum handwork.

Greater horsepower and a new reduced bucket line speed allow this new ditcher to dig through much tougher materials. A new hydraulic caster hoist makes height adjustment easier and more accurate. Optional dual drive wheels permit operation on more unstable base and provide greater flotation and traction. Similarly, optional dual caster wheels increase stability still further and permit the ditcher to straddle previously cut ditch when necessary.

The drive wheel brakes have been increased in area by 300 per cent and the brake control levers have been redesigned to give a finer degree of control. Similar to the gradual pressure control of an automobile foot-brake, both of these advancements assure faster response and more accurate steering.

Higher over-the-road towing speeds

Fig. 51. Pow-R-Spade trencher.

are now possible through the application of tapered roller bearings in the drive wheels and through an improved towing hitch.

•

Wheel Ditcher. (Fig. 53). The new Barber-Greene wheel ditcher, digging a maximum of 5 feet 6 inches deep and offering a complete range of digging widths from 14 to 24 inches, is especially designed to handle numerous applications in the telephone industry.

Fig. 53. Wheel ditcher.

Among the features claimed for this new ditcher are:

Dual Range Hydra-Crowd: A feature exclusive on Barber-Greene ditchers. A new, all hydraulic transmission eliminates all gear shifting for crowding speeds. The operator has at his fingertip control an infinite range of crowding speeds from 0 to 28 feet per minute. These are completely independent of wheel speeds. Hydra-Crowd also provides for instant reverse of the machine, and also offers an automatic "hill-holding" valve to prevent overcrowding on down hill operation.

Flexible Drawbar design means lessened strain and twisting during digging, thus minimizing wear and increasing machine life. It also permits digging on a curve far sharper than possible with a conventional rigid wheel mounting. The wheel and chassis are connected by two flexible couplings which permit movement back and forth, regardless of the wheel position. This permits from 3½° to 5° shift to either side in the relation of the wheel to the chassis.

An Engine Mounting which reverses the power unit from its conventional position and puts the mechanical and hydraulic transmissions at the front of the machine for easy accessibility. A longer, more flexible drive shaft permits vertical wheel movement with less universal joint movement and thus, less wear. Being a telescoping shaft, it permits the wheel differential to be mounted on the wheel frame and adjusts to all wheel positions. The engine placement also improves the balance of the machine.

A New Digging Wheel Drive which features a split digging wheel drive shaft which delivers power uniformly to both sides of the wheel, through a differential mounted on the wheel frame, transmitting power to short, fully guarded final chain drives. A single rigid unit, the wheel drive chains remain in constant tension, eliminating the dangerous and time-consuming possibility of chains jumping sprockets.

Automatic Overload Protection is provided by a balanced flow of power from the engine, plus a digging wheel clutch. The clutch can be instantly disengaged and will automatically slip when the digging load exceeds safe limits.

New Crawler Design which features a single take-up adjustment, through which crawler tension can be adjusted quickly.

Mechanical Spoil Conveyor which offers belt speeds up to 630 feet per minute, coupled with wheel speeds. As an option, a hydraulically driven conveyor may be furnished. Also, with a top speed of 630 feet per minute, but infinitely variable in speed and instantly reversible, it is independent of all other drives.

All controls are conveniently mounted on a small console immediately in front of the operator's seat.

Hydraulic Brakes and Wheel Hoist complete the extensive use of hydraulic power and controls the ditchers.

•

Self-Stowing Hydraulic Jacks. (Fig. 54). A new self-stowing hydraulic jack has recently been placed on the market by Holan Corp. A pair of these new jacks enables users to stabilize trucks or to lift either side in a matter of seconds.

With a push of the control lever, the jack swings down and reaches maximum extension in eight seconds. With a pull on the same lever, the jack returns to the out-of-the-way stowed position in six seconds. Jacks are used for stabilizing parked trucks using power equipment, for spotting diggers and for changing tires.

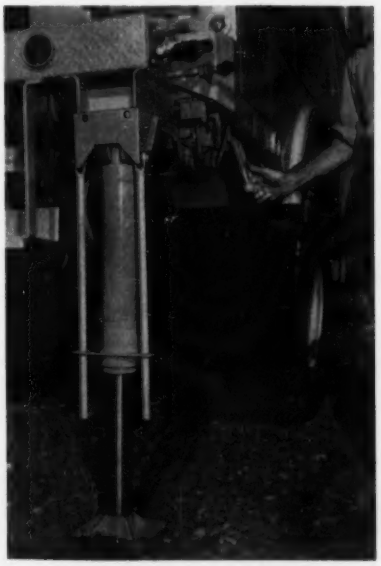


Fig. 54. Self-storing hydraulic jacks.

These jacks have a 14,000-pound capacity, a 40-inch maximum extension (from top to base plate) and a length of 25 inches when stowed.

Hydraulic power is supplied from existing hydraulic systems on the trucks or from a separate circuit installed with the jacks. Working pressure is up to 1200 psi.

The new jacks primarily differ from most recent Holan units in that the design is simpler and the base plate has rounded corners to prevent cutting tubing.

•

Pushbutton Hydraulic Ladder. (Fig. 55). This new manually operated Holan hydraulic ladder goes up and down by pushing a button. The control station is located on the mast, but a remote control station can be installed on the upper right side rail for control by a man on the platform.

Fig. 55. Push-button hydraulic ladder.

For more precise spotting, there is a globe-type needle valve with a long handle. The operator can accurately lower the ladder by pulling on the lever.

The rotation crank of the ladder is located directly behind the mast. This not only provides for more accurate spotting, but it also cranks easier and is out of the way.

Extension and retraction of the fly ladder is through a windlass located on the right side of the ladder. The windlass rotates a steel drum to which a ⅛-inch steel aircraft cable is attached. The cable is wound off one side of the drum as the fly ladder is extended and is wound up on the other side of the drum for retraction.

This new ladder rises from horizontal

to the maximum 75 degree angle in 30 seconds with a man on the platform and fly ladder fully extended; with no man on the platform and fly ladder half extended, it rises all the way in 11 seconds.

Two new optional features available on this unit are steel rungs and a Fiber-glas covering to protect side rails from the weather.

Two of the non-operating features are the light tubular support frame and heavy-duty lock hooks that engage two rungs at a time.

This ladder has an electric motor—hydraulic pump—reservoir unit for raising and lowering. Maximum operating pressure is 1,200 psi. Three models are for 24, 28, or 32-foot ground-to-platform heights. On all units, there is 360 degree rotation and 75 degree elevation.

•

Safety Ladder Step. (Fig. 56). This new ladder accessory offers safety-comfort convenience. This new device was developed by Utility Tool & Body Co. to provide more safety and less fatigue for anyone who works for prolonged periods on ladders. The unit consists of a one-piece aluminum detachable ladder step having a foot rest surface measuring 5 inches x 12 inches.

Fig. 56. Safety ladder step.

The RES-TEP weighs 4 pounds, can be used with any round rung standard ladder and can be easily changed from one rung to another in a few seconds. Complete safety and comfort are assured on any rung regardless of tilt of the ladder. The unit can be used on double extension ladders as well as on single ladders. No adjustments are necessary at any time and ascent or descent is not impaired.

The RES-TEP is so designed that the weight is distributed so that most of it is applied to the ladder uprights instead of the rungs. Deep diamond tread on the entire foot surface prevents slipping.

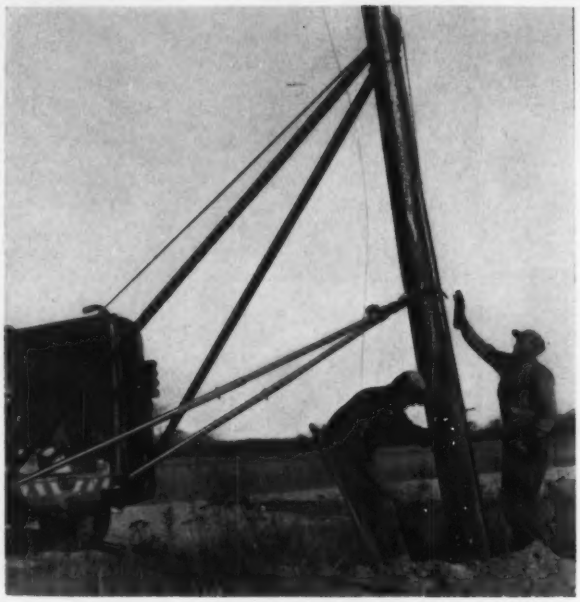


Fig. 58. Pole-moving safety bar.

•

Aluminum Pole Derrick. (Fig. 57). These pole derricks, by Utility Tool & Body, are made from 6061 aluminum alloy, heat-treated according to the T6 formula which it is said, gives the tubing a tensile strength far in excess of the most strenuous derrick requirements. The aluminum derrick claims the following advantages:

(1) Easy to handle when setting up and taking down and loading on truck.
(2) Less fatigue to workers.
(3) Greater safety.
(4) Lower license fees in some states due to reduced gross vehicle weight.
(5) Less painting and repairs.

These aluminum derricks are designed for use with both single and double drum winches, and can be used in both truck and ground or stiff-leg positions. Sizes are available for handling poles from 45 to 70 feet long. A maximum lift from 20 to 28 feet is provided.

Fig. 57. Aluminum pole derrick.

•

Pole Moving Safety Bar. (Fig. 58). This Utility Tool & Body tool is designed for jobs where poles must be pulled and held in place for moving from one location to another—such as in line moving work on road widening projects. It consists of a basic unit (head section) and extension legs in various sizes.

The basic unit or head section consists of a 58 inch chain for lashing to the pole, and eccentric chain binder, pole saddle with sure-grip studs, dual pivot plate, inside telescoping legs, and four-way safety action mounting brackets.

The extension legs are furnished in sizes ranging from 44 inches to 188 inches in length and may be specified in combination with the basic unit or head section to provide the proper length safety bar to meet every requirement. This device keeps the pole under control throughout the pole pulling and moving operation, reducing the hazards of the pole getting out of control and endangering members of the crew. The safety bar has been designed to handle light and medium weight poles.

•

Two-Leg Steel Pole Derricks. (Fig. 59). Utility Tool & Body Corp. also

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Features which cut costs, improve transmission quality, and reduce maintenance.	COLLINS Microwave	A Microwave	B Microwave	C Microwave	D Microwave
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True high density system. Expandable to 480 channels. Using one r-f system.	✔				
Convection cooling throughout. No blowers necessary.	✔	✔	✔		
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Space-saving by using both sides of rack.	✔			✔	
Interconnection panel at top of equipment.	✔				✔
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Loud speaker available in service channel.	✔		✔		
Hot and cold standby. Frequency and space diversity equipment available.	✔			✔	
Ferrite isolator in receiver to reduce distortion and prevent local oscillator radiation.	✔				
Synchronous carrier (all channels) — as required for high speed data.	✔				

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Fig. 59. Two-leg steel derrick.

has a two-leg derrick which was designed for lighter duty operation and is used most often on ¾ and one-ton trucks. The derrick can be mounted at the top of the rear compartments or at the rear of the truck frame.

The standard type derrick features one-piece side legs and can be left mounted on the truck for traveling. The telescoping type features two-piece side legs and can be easily disassembled and carried on the truck.

Standard equipment includes:

(1) Two fabric-covered guy cables and brackets.
(2) Two safety chains and brackets.
(3) Two side leg mounting brackets and connecting bolts.

Optional accessories also available include:

(1) Front derrick rest support.
(2) Reinforcement of rear of body.
(3) Spindle bar and sheave.
(4) Spindle bar bracket and support.

•

Line Construction Truck (Fig. 60). This fully-equipped construction truck, International Model A-172, is well suited for general line construction and maintenance work. Gross vehicle weight of the unit is 19,500 pounds. These trucks are available in 129, 141, 153 and 189-inch wheelbase. A wide variety of engines, transmissions and rear axle options are offered to meet varying use requirements. Four-wheel drive and six-wheel drive chassis are available when required for severe service.

•

Six-Passenger Travel Crew Cab. (Fig. 61). This new six-passenger travel crew cab is now available for medium and heavy-duty International truck models. It is designed on both rear axle drive and all-wheel drive

Fig. 61. Six-passenger crew cab.

versions. This new cab, designed for factory-installation, increases bumper-to-back-of-cab dimensions by only 36 inches. Provision for 60 and 84-inch cab-to-axle dimensions is retained to permit standard body installation without requiring frame modifications in the field.

•

Utility Truck. (Fig. 62). This International Travelette, with service-utility body, is a truck designed to transport both work crews and materials. Travelette's cab seats a crew of six, while the special 7-foot service-utility body

Fig. 62. Travelette utility truck.

provides ample space for tools and supplies. Travelettes are available in a wide variety of models and can be optionally equipped with power steering, power brakes, automatic transmissions and four-wheel drive. Gross vehicle weight is 4,200 pounds.

•

All-Purpose Telephone Truck. (Fig. 63). This vehicle, designed for telephone work, is the International Model A-110 with a factory-matched service-utility body. Four different service-utility bodies with lengths ranging from 77 to 100 inches are available, factory-installed, on a wide variety of light-duty International chassis. Power steering, power brakes, automatic transmissions and four-wheel drive are optional features. The gross vehicle weight of this model is 4,200 pounds.

•

Volkswagen Telephone Trucks. (Fig. 64). These trucks include various models—pickup, panel delivery or Kombi station wagon.

The Volkswagen engine is air-cooled by means of a fan with thermostatic control. The operation of this engine is not affected by a temperature drop below zero or soaring to more than 100 degrees F. The engine has extremely

Fig. 60. Line construction truck.

Fig. 63. All-purpose telephone truck.

Fig. 64. Volkswagen truck.

long life, due to its short piston stroke, low piston speed, carefully balanced crank shaft supported in sturdy bearings, as well as the special-type oil cooler mounted in the air stream.

The various body styles available on the Volkswagen may be easily compartmentized to meet any telephone requirement. They have proved especially practicable for light installation and trouble work.

•

Combination AC/DC Generating Plants. (Fig. 65). Two new gasoline-driven electric generating plants, in 1

Fig. 65. Combination ac/dc generating plant.

KW and 2 KW sizes, each with a high 30-amp regulated 12-volt, dc battery charging circuit are now available from D. W. Onan & Sons. They are designed especially for charging batteries on work trucks or other vehicles which have a high current drain imposed upon them by lights and communications equipment.

Use of the combination ac/dc electric plants, instead of the vehicle engine, to keep truck batteries constantly charged while at the job site, effects considerable savings.

In addition to the dc battery charging circuit, each of the two units will provide either 1,000 or 2,000 watts (according to their rating) of ac power for the operation of electric tools and floodlights.

Both models are equipped with Onan's exclusive Vacu-Flo cooling which simplifies installation of the unit in utility line trucks and other vehicles. This feature permits the generating plant to be mounted in a compartment not much larger than the set itself, with only small ventilating openings needed for intake and exhaust.

Each model is powered by an Onan single-cylinder, 1,800 RPM, four-cycle engine direct-connected to an all-climate Onan-built generator. Both are completely self-contained, with remote starting controlled from the plant, the truck cab instrument panel, or anywhere else convenient on the vehicle. Effective radio suppression minimizes interference from communications equipment.

To prevent the battery from being charged from both sources (generator and vehicle engine) at the same time and possibly damaging the truck's charging regulator, a disconnect relay automatically opens the generator's charging circuit when the truck engine is running. A thermal overload breaker protects both battery and battery charging circuit.

•

Pumps. (Fig. 66). Three new pumps, the "300" series, have just been announced by Homelite. These new 3 inch self-priming, centrifugal pumps have capacities of 18,000 gallons per hour.

The new Model 8 engine starts quickly even in the coldest, wettest weather, it is said, and the two-cycle engine has fewer moving parts. New ceramic-coated seal, standard equipment on these units, lasts five times longer than the common cast iron-bronze seals on ordinary pumping jobs; fifteen to twenty times longer under highly abrasive pumping conditions, the company states. New impeller and volute designs result in fast self-priming, greater discharge pressures and high suction lift. Self-cleaning construction permits handling of muddy and sandy water without clogging. All three models are guaranteed to pump and prime at 28 feet above water level.

The quiet, slow-speed Model 8S3-1, is ideal for use in city and suburban areas and for emergency night operations where noise is a problem. This pump has a total head of 65 feet. Where higher discharge pressures are required, the fast-priming, standard-speed Model 8S3-1R pump is used. Total head is 125 feet. Third in the "300" series is the Model 8S3-1P, for jetting, fire fighting,

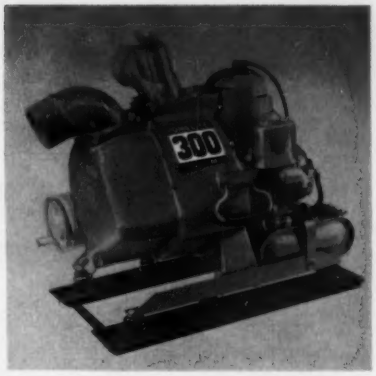

Fig. 66. All-purpose pump.

irrigation and other jobs requiring high discharge pressures. It delivers 102 gallons per minute at 60 P.S.I. Total head is 185 feet.

All three pumps, each weighing only 103 pounds, can be carried to any pumping site. Manual throttle control allows the matching of pumping speeds to job requirements.

•

Ventilating Manhole Heater. (Fig. 67). The MoPeCo Model PE ventilating heater is designed for use by public utilities industry for clearing manholes of explosive gases.

(Please turn to page 60)

Fig. 67. Ventilating manhole heater.

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Jack Pruzan Co.
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Southern Electrical Corp.
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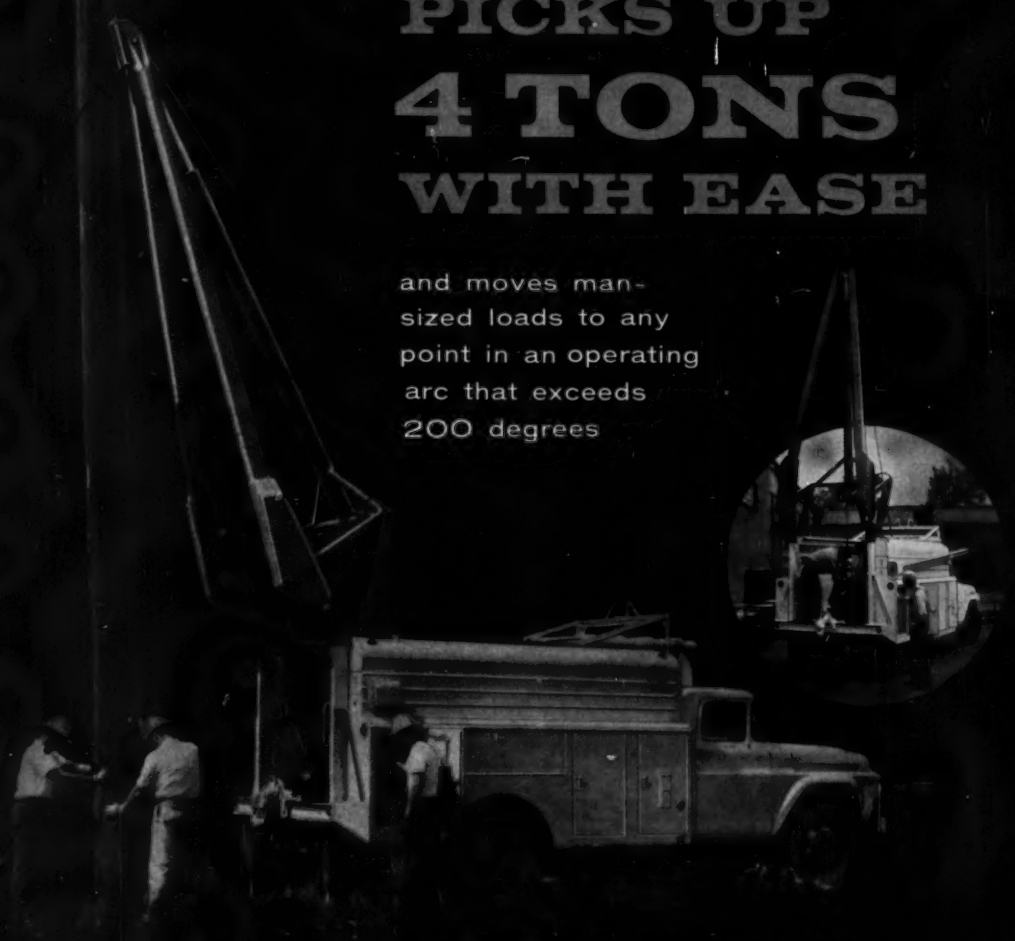
and moves man-sized loads to any point in an operating arc that exceeds 200 degrees



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The powerful PM-1 "Pole-Master" gives you the kind of speed and capacity you want for pole setting work and other man-sized lifting jobs. It will move loads to any point in an operating arc that exceeds 200 degrees ...and the head sheave can be lowered to approximately 18" above the ground. Operation is controlled by a single lever. All the work is done by a single hydraulic cylinder and a single-drum winch.

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Teacher Chellis Emmons uses Teletrainer unit in Big Rock, Ill. high school commercial class.

The Telephone Goes to School

Businessmen said "teach students how to use the telephone" and the result was the Teletrainer Program for schools. Here's how it works and how the Illinois Telephone Association solved a problem in making the program available to teachers.

A TELEPHONE call to "Parker's Bakery" was coming into the classroom at Hinkley-Big Rock Community High School, Big Rock, Ill. It was not a wrong number given to the high school telephone by a DeKalb-Ogle Telephone Co. operator, but part of an office practice class in Chellis Emmons' afternoon commercial class.

The call was placed by one of the students from a special telephone in an adjoining room. Wires from the telephone led to a gray 8-by-9-inch box on Mr. Emmons' desk. Another set of wires led to a second telephone answered by one of the students in the classroom. A loudspeaker in the gray box "broadcast" the conversation so the whole class could listen to this practice call and make comments after it was completed.

This call to "Parker's Bakery" is one of 29 different role-playing situations in what is called the "Teletrainer Program." It's designed to teach students how to use the telephone properly and is carried on through the cooperation of teachers and telephone companies. This particular call is designed to illustrate certain phases of proper telephone usage to high school and lower grade students studying commercial courses. During the call such points as prompt answering, complete identification, asking caller to wait, reporting to caller after 60 seconds, taking an order from caller and other procedures are taught.

Mr. Emmons' students are among the 535 in 17 high schools in the DeKalb-Ogle Telephone Co.'s area in central Illinois that use the Teletrainer Program. The special telephone equipment, teaching books and material for use by students is loaned to these high schools by the telephone company.

"We have so many requests for this equipment that I have to schedule it pretty tightly during the school year to give all the schools a chance," says Ed Bell, general traffic manager for the DeKalb-Ogle company. Even Northern Illinois University at DeKalb uses it to show commercial teachers what is

(Please turn to page 53)

Ed Bell (left), general traffic manager, and Dan Schaefer, general manager, of the DeKalb-Ogle Telephone Co., Sycamore, Ill., reading about Teletrainer Program in a brochure distributed by the Illinois Telephone Association.

ACME VISIBLE

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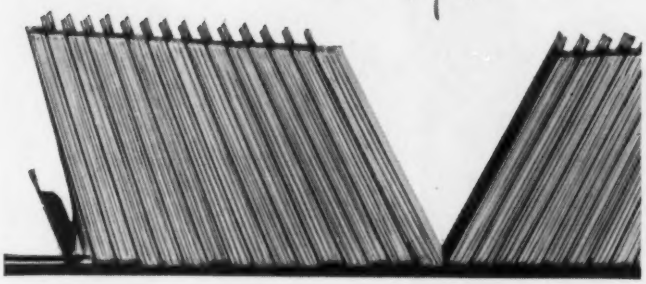
LINE CARD FILING



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LINE CARD TRAYS
For standard sizes of cards

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Line Card Tub

Acme Visible Equipment is designed for telephone use by Systems Engineers in close cooperation with practical, experienced telephone experts.
Call upon our experience - nationwide sales and service to the telephone industry.

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Tell me more about your new ideas on line card filing. T-4-11-59

We Have_____ (Total Quantity) **Cards, Filed**_____ (How Many) **to the inch as sample attached.**

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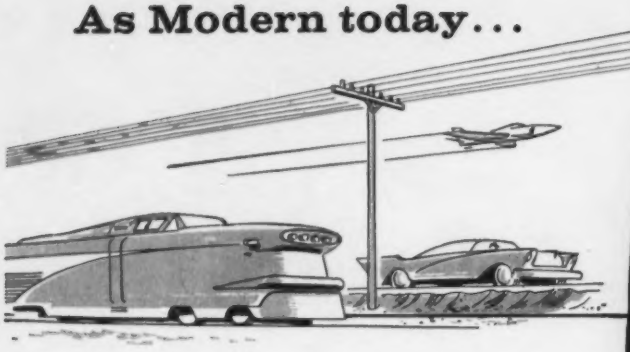
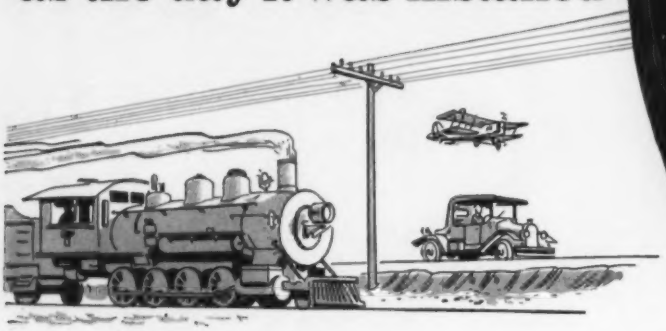
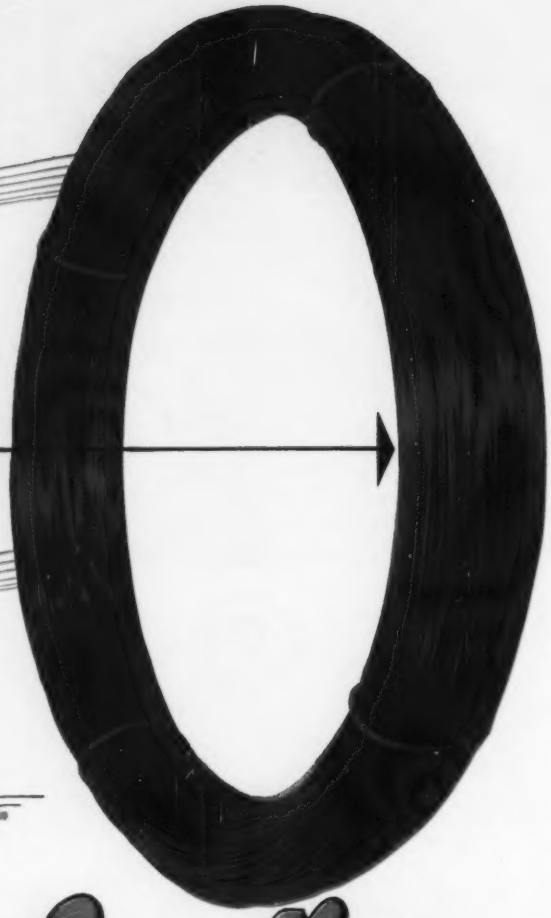


as the day it was installed





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MERCHANDISING and SELLING

Theme of Texas Convention

By R. C. RENO

MERCHANDISING and selling telephone service was the main theme of the annual convention of the Texas Telephone Association, held Mar. 2, 3, and 4 in San Antonio.

This theme was brought to a climax at the final session of the convention by a two-hour dramatic program entitled "Texas Telephone Telerama." (See accompanying photos.)

Three skits, composing Part 1 of Telerama, emphasized the responsibility of the plant, business office and traffic departments to sell additional service and facilities to customers. These skits were given by members of Barnet (Tex.) Telephone Co., Southwestern Bell Telephone Co. and General Telephone Co. of the Southwest.

The second part of Telerama—built around the subject, ". . . *and the Newness Thereof*"—was a skit depicting the need for increased emphasis on sales within the "Kingdom of Telephony." The king (Mark F. Cooper, public relations director of General Telephone Co. of the Southwest) called his subjects (the audience) to his palace for a meeting designed to inspire them to sell. The Coordinator of Sales (Joe H. Collyns, public relations assistant of the General company) arranged the showing of special and additional services and telephones which could be sold. These were portrayed by elaborately costumed female students of the Drama Department of Trinity University, San Antonio. Each did an outstanding job with their lines, telling the sales points of the specific service or facility she portrayed, which were given with an air of sultry, subtleness with a certain "Come on" inflection.

Members of the king's staff—the Coordinator of Sales, the Page (Dick Post, public relations director of Southwestern States Telephone Co.), and guard (Dor Hopkins of the Southwestern Bell Telephone Co.) were dressed in a mixture of Grecian, Roman and "never-never land" costumes.

The production was staged against a back-drop of spotlights, explosions, music and an atmosphere of pageantry.

The Telerama made a big hit with the Texas convention not only because of its unique pageantry, the girls, color, etc., but because it really emphasized the importance of every telephone to conduct merchandising and sales programs in a different and interesting manner through the theme—"Selling, and the newness thereof is YOUR concern. Begin it, continue it."

The production, ". . . and the newness thereof," was written, produced and directed by Joe Collyns. Employes of the General, Southwestern Bell and Southwest States telephone companies assisted with the music, costumes, lighting, sound, properties, etc.

The convention was ably presided over by Association President D. J. Gardner Jr., president of the Nocona (Tex.) Telephone Co.

The first speaker on the program was F. E. Morris, director of Telecommunications Research of Stromberg-Carlson Co. His subject was "A Worm's Eye View of Electronic Switching."

Stating that no major public service industry has existed in its original form, or with its original importance, for over half a century, Mr. Morris warned that the telephone industry might well examine itself most critically as to the over-all service it renders to the public.

"In many instances, organizations which have rendered so-called public service have declined, and improved types of service or new services have been offered by other organizations. This seems to be due to the fact that many companies seem reluctant to recognize that they are becoming obsolete, or that the services they render could be improved," Mr. Morris said.

There is no question that anybody with imagination can find faults with the telephone and can conceive of more pleasing systems of communication, thus the desire for other types of communications services could easily exist, he warned.

"Telephone companies," Mr. Morris said, "can forestall early obsolescence by increasing the convenience and the flexibility of their service. Electronic switching may be an important factor in making this possible in the future." He continued:

"It is the writer's opinion that small savings in both initial cost and maintenance will undoubtedly result from the ultimate adoption of electronic switching. Any techniques known today are not price competitive in any way with existing electro-mechanical systems and it will probably be a matter of several years more before suitable electronic techniques will have been discovered and developed. It is, therefore, felt to be unfeasible for any telephone company to delay the installation of needed dial switching equipment because of the fear of rapid obsolescence.

"Even if electronic switching does become price competitive, from the subscribers' standpoint there will probably be little or no preference for it if the present philosophy of telephony is maintained. The subscriber cares little whether the service is rendered by means of white mice or the more exotic of solid state electronic techniques—his interest is only on the fact that he can establish a connection.

"It probably will be many years before the commercial value of the extreme flexibility afforded by the "computer" type switching system will have been determined. At the moment, it would appear that there are no techniques which permit this type of operation at anywhere near sensible prices for the average-sized switching system to be found in the Independent industry. Thus, at the moment, even if it were found to be highly desirable, there is no guaranty that the Independent companies can adopt it.

"If and when electronic systems become actually cheaper than electromechanical systems, it is the writer's strong recommendation that any savings be used for improving service, rather than in increasing profits, as an investment towards perpetuating the art."

In view of the future trend toward electronic switching and other electronic

Participants in the Telerama program at the Texas convention shown on the stage after they completed their skits. At the microphone at left is the King, portrayed by Mark F. Cooper, public relations director of General Telephone Co. of the Southwest. At the left of the King's throne (center) is the Page, played by Dick Post, public relations director of Southwest States Telephone Co., and at right of throne is Guard, portrayed by Don Dor Hopkins of Southwestern Bell Telephone Co.

The Coordinator of Sales in the Texas Telerama, portrayed by Joe Collyns, public relations assistant of the General Telephone Co. of the Southwest, introduces the various participants depicting telephone items to be merchandised and sold.

devices, Mr. Morris strongly recommended that managements and employes of telephone companies read and study all of the material obtainable on these new developments so that they will be in a position to apply them in their companies' future operations.

"Color and Its Physiological Effect" was the subject of an illustrated address by Lt. Col. Vincent I. Hack, MSC Chief, Training Aids Branch, Army Medical Service School, Fort Sam Houston, Tex.

Col. Hack demonstrated the effect that various colors have on individuals and made many references to the application of color to telephones, which he said should be of interest to those in charge of merchandising and selling telephone service.

The entire afternoon session of the second day of the convention was given over to a meeting of REA borrowers and to a general discussion of federal excise taxes.

The REA borrowers' meeting was conducted by Dee Cole, chairman of the Texas association's REA Borrowers Committee. Taking part in the meeting were Norman H. McFarlin, assistant REA administrator; Ed Maddox, assistant chief of the REA loan and operations division, and W. G. Winters of Houston, chairman of the REA Borrowers Committee of the United States Independent Telephone Association.

The discussion on the industry's current movement to bring about the abolition of federal excise taxes on telephone service was presided over by E. H. Utzman of Brownwood, Tex., chairman of the Texas association's Commercial Committee.

"Recent developments in electronics have inaugurated a new epoch in the telephone industry," Hugh A. Barnhart of Rochester, Ind., president of the United States Independent Telephone Association, told the convention in an address entitled, "USITA Looks Back, Then Forward."

Through electronic wizardry, we can pack, into the space of a cubic yard or so, telephone switching apparatus that can do the work of equipment now requiring a big room full of coils, condensers and relays, Mr. Barnhart pointed out.

Mrs. Joe Collyns pictured during the Telerama after she had changed from a black robe to a pink formal to indicate the change-over from the conventional black telephones to the modern colored instruments.

"The star actor in this drama," the USITA president continued, "is the tiny transistor — the miracle worker which promises to revolutionize not only the telephone industry but many industries and services that make use of the amplification of electric current."

The telephone industry's "changed conception" of telephone service may also be attributed to increased use of the telephone, Mr. Barnhart said. "Direct Distance Dialing," he continued, "is only one development which has contributed to this increase. Popularity

Broadest battery line is Exide... choose the one best suited to your own application

Exide-Tytex Batteries with Calcium Grids were chosen by Northern Ohio Telephone Company for this exchange at Medina, Ohio. Only Exide offers the unique combination of calcium grids with Exide-Tytex construction.

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of the telephone has given us a new conception of how to promote and sell our product.

"The house of the future will have a telephone in every room and in every place such as the hall or garage where someone may call or be called without wasting time, nerves and tempers."

Commenting on the 10 per cent federal excise tax on telephone service, Mr. Barnhart reported that "the USITA tax committee is working constantly to keep members of Congress informed about this unfair tax. The way to bring about the repeal of the excise tax," he concluded, "is through individual subscriber demand aided by complaints from consumer groups, chambers of commerce, and service organizations. These efforts must be supplemented by telephone companies on every available frontier."

In an address entitled, "Let's Keep Our Business and Politics Straight," R. C. Reno, editor of TELEPHONY, warned his listeners that public utilities, including telephone companies, are vulnerable to political attack because they have failed to acquaint the public with their role as government-regulated "natural monopolies."

Stating that the "monopoly" feature of public utilities gives rise to public misunderstanding, the speaker stated:

"It is the duty of public utility management to develop a better public knowledge of such matters.

"Too many customers are unaware that public utilities, such as telephone, power and gas companies, function only under strict government regulation, or that they enjoy the monopoly of certain areas only because the government has authorized it to prevent waste and duplication of facilities.

"Great masses of the public do not realize that state and federal government regulatory bodies exist for the protection of the consumer by fixing monthly rates which utilities may charge, as well as in other ways."

This group of members of the Independent Telephone Pioneer Association photographed at the Texas convention are left to right: Mrs. Kay Adair of Little Rock, Ark.; Mrs. W. E. Lyon of Killeen, Tex.; Mrs. Dee Cole of Greenville, Tex.; C. M. McClellan of Dallas; Winnie D. Burnett of Brownwood, Tex.; Mrs. McClellan; Berney Simner of St. Louis, Mo., and Mr. Lyon.

He warned that if public utilities fail to make these facts known to the public they could become prime targets for "unthinking, uninformed and self-seeking candidates" during coming election campaigns.

"Public utilities should not abandon their traditional role as strict political neutrals," Mr. Reno emphasized. "Nevertheless, I very much fear that they may be dragged in to serve as political footballs in local, state or national elections and they should be prepared to uphold the regulation system under which they operate."

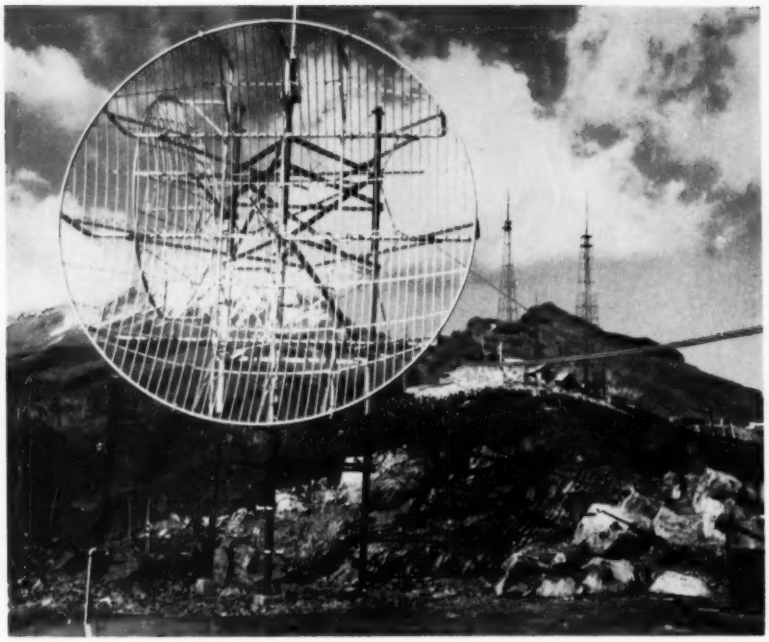
Two big jobs of a telephone man are (1) running his company right and seeing that it gives good service, and (2) assuming his responsibility of being a good citizen by taking active interest in the political and civic affairs of his community, Edwin M. Clark of St. Louis, Mo., president of the Southwestern Bell Telephone Co. told the convention.

"Running a telephone company is a big job. It's big enough to challenge the talent and the spirit of adventure of any man who wants a really worthwhile career in the business world. It means providing the plant and equipment so that the people in any community can call one another and carry out the thousands and millions of business and personal transactions that take place every day. It means providing sufficient facilities to serve everyone who wants to be served. This is an ideal, of course, and few if any of us have yet reached it. But, it is a goal towards which we must resolutely move as rapidly as we can," Mr. Clark stated.

An executive of a telephone company, can delegate a great many details of operating a telephone company to other persons. But, he cannot delegate

(Please turn to page 55)

Women delegates to the Texas convention participating in a bingo game following the annual ladies luncheon.



Interference from two TV transmitters (at right, in background) and other communications equipment had to be calculated in establishing the Paso de Cortes repeater site in Telmex microwave system linking Mexico City and Acapulco. Snow-capped Ixtaccihuatl is shown to left behind 10 and 15-foot antennas facing Mexico City and Alquitran. Hop to Alquitran spans 132 miles, longest of four sections in 227-mile system.

Microwave System Links Mexico City and Acapulco

A SIGNIFICANT advance in telecommunications has been achieved by Telefonos de Mexico (Telmex) in placing in service that nation's most extensive microwave radio relay system, and in proving the feasibility of regular transmission over point-to-point distances previously thought impossible.

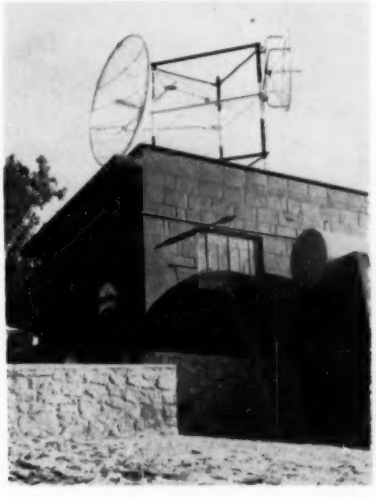
The four-hop, 227-mile system links Mexico City with the Pacific Coast resort city of Acapulco, spanning more than half the distance in a single line-of-sight hop of 132 miles. Two other sections, of 42 and 45 miles, also are longer than the usual microwave hop.

Installed and tested extensively during 1958, the microwave system was officially taken over by Telmex at the start of this year. Only a month later, its value was proven during the Acapulco meeting of President Eisenhower and Mexican President Lopez-Mateos. For more than 500 newsmen and government officials of both countries, it was a key link for telephone communications to Mexico City and from there to international circuits both north and south. Telmex, a privately-owned firm, is Mexico's largest telephone company, providing service throughout the country.

The radio equipment is Lenkurt Type 72C, a 900-megacycle system designed for telephone toll applications.

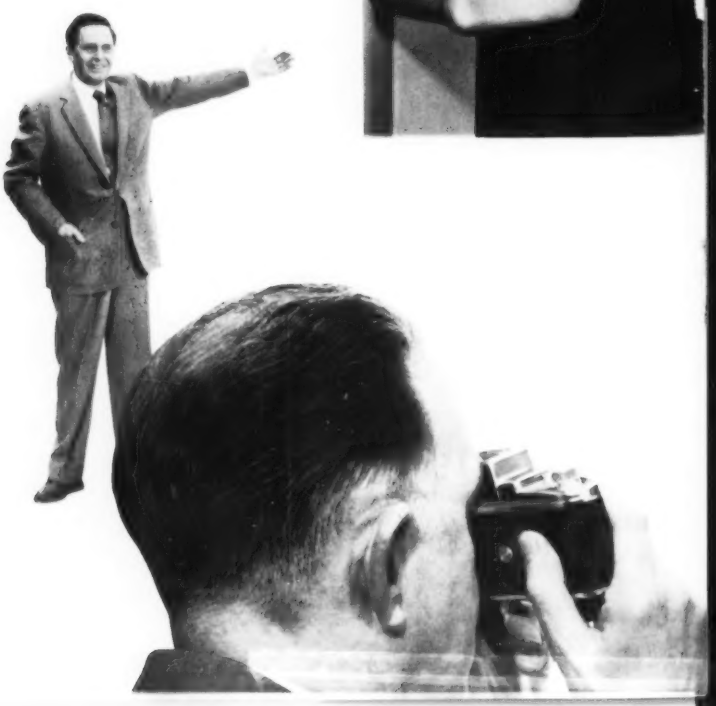
The challenges that had to be met in the Mexico installation were far more demanding than anything encountered in the U. S. The installation crosses mountainous country thick with virgin

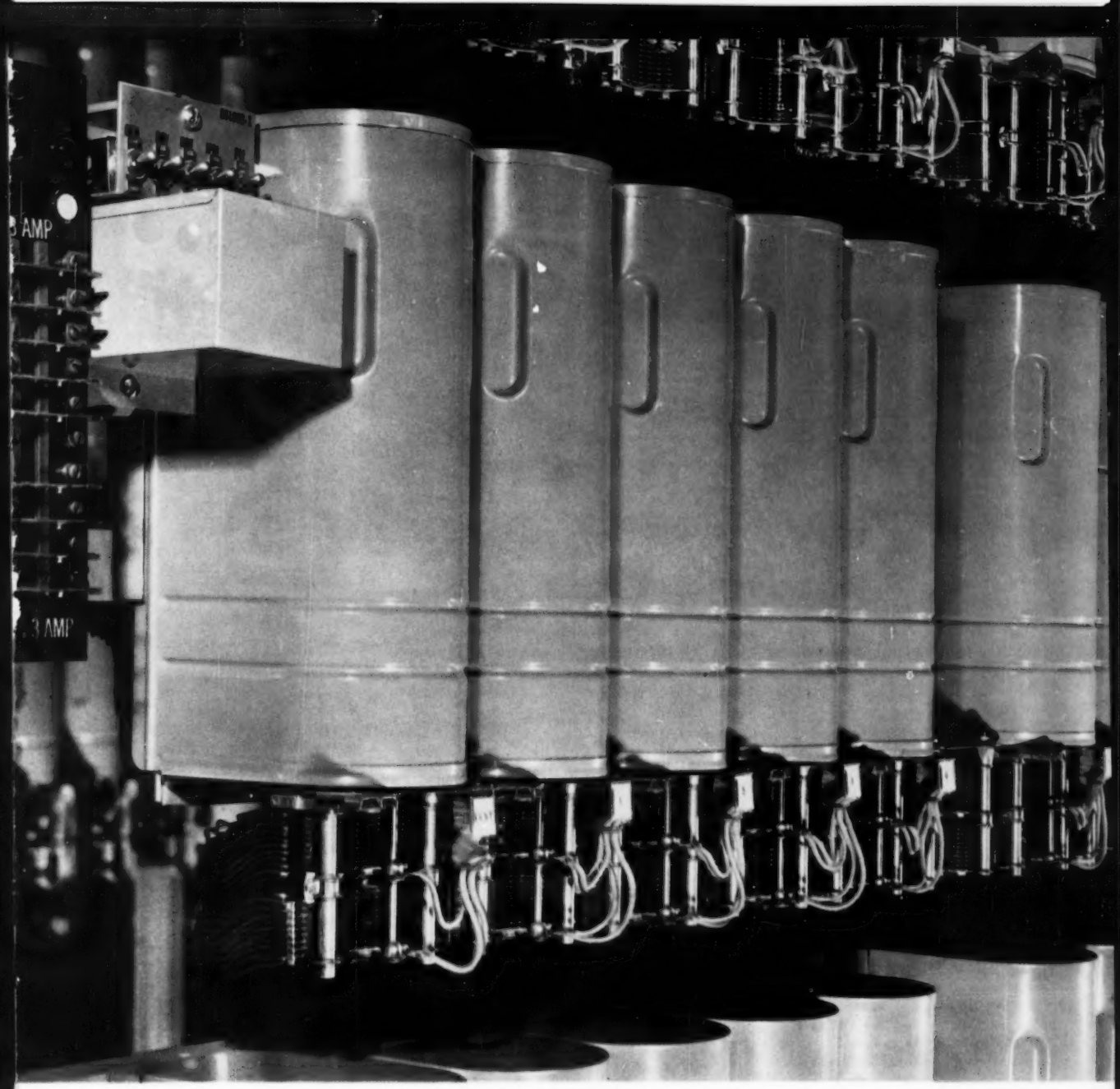
(Please turn to page 42)



LEFT: Granite boulders dotted Entrada site during path tests for Acapulco-Mexico City microwave system. Later, stones were blasted out, crushed and used in the driveway and foundation for the equipment building at this repeater station, 8 miles from Acapulco terminal. RIGHT: Concrete block building was erected at Entrada. Six and 10-foot parabolic antennas look toward Acapulco and Alquitran, respectively.

"Isn't Strowger equipment beautiful?"





The owner of a Strowger Automatic exchange is a proud and happy man. To him, it's one of the *prettiest* things in the world!

But his equipment is more than an eye-appealing showpiece—it's a marvel of quality construction. Operating with absolute dependability, Strowger Automatic helps his days go smoothly. Completely adaptable to changing needs, it makes his investment secure for years to come.

Talk with Strowger owners. Convince yourself. Then call in your friendly Automatic representative. He'll assist you in planning your own secure future. Address: *Automatic Electric Sales Corporation, Northlake, Illinois. Or call FIllmore 5-7111.*

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undergrowth. Weather conditions range from humid tropical heat at Acapulco to the temperate climate of Mexico City and include nearly every weather phenomenon from snow to torrential rains and hurricanes.

As Acapulco boomed into an international vacation spot during the past decade, telephone traffic between it and the capital city boomed also. By adding two Type 45A carrier systems to existing land lines, Telmex was able to provide a total of 24 additional toll circuits. Soon these too were overloaded.

Wire lines in the area follow a cross-country highway through widely-scattered communities, and they are difficult to maintain. Despite Mexico's low construction costs, new open wire installations appeared prohibitive because of the rough terrain and long stretches between population centers—features which lend themselves to microwave.

Telmex engineers concluded that point-to-point relay of telephone circuits by microwave was the most practical way to expand long distance communications and ease the load on land lines.

To support the finding, Lenkurt de Mexico, of Mexico City, provided Telmex with a demonstration system designed for easy conversion to a permanent installation in the future. The system, equipped with 24 channels initially, can be readily expanded to a capacity of 120 voice circuits by adding more carrier equipment at terminal sites.

The- 890-940 megacycle band was chosen over higher frequencies because propagation is more reliable and can be effected over longer distances. The multiplex equipment is Type 45BX, a frequency division carrier system in use by U. S. and Canadian telephone companies and by the U. S. Government in defense projects such as the DEW line and Texas Towers.

In planning the system, Telmex engineers and Lenkurt de Mexico were assisted by "Engineer, Furnish and Install" specialists from Lenkurt's San Carlos, Cal., staff.

From the very start, normal problems of route selection were complicated by a lack of accurate topographical information, particularly on interior areas. Closer to Mexico City and Acapulco, line-of-sight paths were pretty well defined by a ring of mountains around the capital city and by a range of hills surrounding Acapulco.

A choice repeater site near Mexico City found near Altzomoni in the Paso de Cortes, a high valley that dips in a natural saddle between the snow-capped peaks of Popocatepetl and Ixtaccihuatl. Altzomoni's 14,000-foot elevation also offered good line-of-sight to several other large cities in central and southeastern Mexico.

Several TV and FM transmitters as well as other communications equipment for private companies are located in the pass. By careful planning to eliminate interference from these other installations, it was possible to select a suitable repeater site. This was 42 miles from Mexico City.

On the hills about eight miles from Acapulco, another repeater site was established and given the name Entrada (entrance to Acapulco).

From Entrada to the Paso de Cortes, there remained 177 miles of hinterland. With a few rough maps, the engineers began their search for an intermediate repeater site along the Mexico City-to-Acapulco highway. At Chilpancingo, about 60 miles from Acapulco, they found local residents who directed them to a range of hills from which, on a very clear day, they had been able to see not only the snowy crowns of Popocatepetl and Ixtaccihuatl but the Pacific Ocean as well.

With this and their sketchy topographical data to go on, the engineers decided to try for a relay site on a hill called Alquitran (elevation 10,000 feet). From the main highway, an abandoned logging road wound for 10 miles up to the hilltop, a journey that took two and one-half hours for a jeep pickup truck with four wheel drive.

Path testing for the route was conducted for more than two months under adverse weather conditions including a tropical storm which dropped 8 inches of rain on the Entrada site in a single five-hour period.

On the 132-mile link, enough data was gathered to indicate that toll quality circuits could be provided with the aid of 15-foot parabolic antennas at each end of the long hop.

Less than a month after installation work was completed, and while final tests were underway, the system proved its reliability in an emergency. An unusually heavy snow storm hit the mountain passes in Central Mexico, knocking out the open wire route some 40 miles from Mexico City. Calls between the capital city and cities west of the break were transmitted over the microwave system to Acapulco and then back-hauled over land lines to the isolated communities.

Terminal equipment for the microwave system is housed in existing Temmex buildings in Mexico City and Acapulco, but completely new installations were required at all three repeater sites. A concrete block building was erected at Entrada while prefabricated aluminum buildings went up at the other stations.

Existing power was available at only one relay site, so diesel generators had to be placed at the others. Antennas on the route range from the 15-foot parabolas on the 132-mile hop to a corner reflector in Acapulco.

With successful operation of the new system, and the potential for linking other cities to the main route, the use of microwave can be expected to increase in Mexico. Already Telmex is planning installation of a 40-mile section that will link the city of Puebloa with the route at the repeater station nearest Mexico City. Other branch routes to Cuernavaca, Veracruz and the southeast part of the country also can be tied in at the same station.

The country's geography—mountain barriers separating the major population centers—is a "natural" for microwave. And within a few years, radio repeater stations and parabolic reflectors like those along the new Acapulco route may become a familiar sight in the Mexican countryside.

Book Review

"HISTORY OF MATHEMATICS," by D. E. Smith; Vol. I, 596 pages; Vol. II, 725 pages: soft cover, $2.75 each; boxed, $5.00.

These volumes were written for the purpose of supplying teachers and students with a usable text and reference book on the history of mathematics through the first steps in calculus. The author has done this by presenting the subject from two distinct standpoints.

Volume I presents a chronological survey of the "Man" and "Country" upon whose ideas our present mathematical knowledge is based.

Volume II presents the evolution of mathematical topics as follows: arithmetic, geometry, trigonometry, calculating devices, algebra, and calculus.

Both volumes are written to present a historical survey to the reader interested in a survey only. For the reader who wishes to probe deeper, the historical sources are provided in footnotes.

For the telephone man embarked on a course of self education, these volumes will enable him to absorb the facts without a loss of interest and to avoid the straying of thoughts which sometimes occurs with a straight technical presentation.

In learning, with the background provided by the author in his "History of Mathematics," math becomes a live subject instead of a lifeless one. You can buy this book from TELEPHONY.

Reviewed by Victor Willard.

The message is:

MONSANTO POLYETHYLENE 14202 NOW WESTERN ELECTRIC APPROVED

as high molecular weight black polyethylene telephone cable jacketing material

What does Western Electric approval mean?
It means passing the most exacting tests in the industry. 14202 Black can meet specifications established to assure an estimated cable service life of 30 years or longer! Western Electric tested for stress crack resistance, low gel content (to minimize localized degradation), appearance, extrusion rates, heat stability. And the testing extended over a long period of time to assure uniformity of properties.
Western Electric approval qualifies Monsanto as an additional source of black polyethylene for Bell System telephone cable jacketing applications.
For complete technical data, write to Monsanto Chemical Company, Plastics Division, Room 1166, Springfield 2, Mass.

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ONE OF THE principal products of Western Electric's Omaha Plant is telephone exchange cable. Production begins with copper rod and raw plastics; flows through a continuous series of highly mechanized operations, to emerge as finished cable.

OMAHA, NEBRASKA

This big cattle and grain city—the "Gateway to the West"—recently welcomed the completion of a modern new Western Electric plant. Here we're making telephone equipment for the Bell System . . . and helping Omaha build a brighter, more prosperous future.

It's just a short ride southwest from bustling downtown Omaha to the acres of buff brick buildings that house Western Electric's spanking new Omaha plant . . . now in operation.

Here some 2,800 Omaha men and women are now at work. Eventually their ranks will grow to about 4,000. The skill and talent of these men and women is devoted to making dial switching equipment and telephone exchange cable . . . our job in Omaha. It's an important part of our assignment as manufacturing and supply unit of the Bell System.

What's all this mean to Omaha? For one thing, good jobs for many people. It means contributions by W. E. folks to the city's civic and social life. And added business for some 260 local firms (part of our state-wide total of 375 suppliers).

It means something to us, too. The chance to benefit from the native talents of the men and women who are working with us . . . and the opportunity to enjoy the friendliness and hospitality of this great city of the plains.

Besides Omaha, Western Electric has plants in 25 other cities where we also make telephone equipment for the Bell System. Last year we purchased over a billion dollars worth of raw materials, products and services from over 30,000 suppliers located in every state. Of these, 90% are "small businesses." The things we make and buy are distributed to the Bell telephone companies through Western Electric distribution centers in 32 different cities.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

PART-TIME STUDENTS at company expense, W. E.'s Kenneth Hooker and Mari Ann Feiler attend the University of Omaha. This year, 54 Omaha employees are enrolled in classes through W. E.'s Tuition Refund Plan.

LOU GERDES, City Editor of Omaha World-Herald, knows his town and its people. "We were glad when W. E. came to Omaha," he says. "We knew they would be good for the city and felt sure they'd find Omaha a good place to be. It's worked out just that way, too."

E. F. OWEN (right) of the Paxton & Vierling Steel Co. talks over orders with W. E. buyer Robert Groth. Most of our suppliers in Omaha – like Paxton & Vierling – are small companies with less than 500 employees. For all, business has increased since Western came to town.

COMMUNITY MINDED. W. E.'s Harlon N. Harvey (left) accepts plaque from Community Fund Chairman Leo Daly. Plaque recognizes outstanding employee participation in the Omaha Community Fund drive.

Courts and Commissions

City Can't Issue Franchise, California Court Rules

The California Supreme Court ruled on Mar. 17 that San Francisco cannot legally issue a franchise to the Pacific Telephone & Telegraph Co.

The ruling written by Justice Marshall McComb, automatically bars the city from collecting a franchise tax from the telephone company and states that the PT&T need not have a city franchise if it has a state franchise.

Pacific Telephone & Telegraph was granted a California franchise in 1907.

In 1911 the supreme court ruled that constitutionally chartered cities such as San Francisco could issue franchises and collect payments from utilities despite the earlier ruling. That decision was reversed by the Mar. 17 ruling.

Directly reversing a 1956 decision of Superior Court Judge William F. Traverso, the state court held:

"We are of the opinion that the construction and maintenance of telephone lines in streets and other public places within the city is today a matter of state concern and not a municipal affair."

San Francisco had insisted that $1,200,000 was due the city every year under a franchise which expired in 1956.

Under a compromise agreement pending a ruling by the supreme court, the city has been receiving $200,000 a year from the company.

The old franchise provided for the company to pay the city two per cent of its gross receipts, furnish the city local service on 1,000 cost-free telephones, and set aside trunks for police and fire department communications.

The company insists that it should pay only $200,000 a year annually, with the right to discontinue the free telephone service.

Request Rate Increase For Exchanges in Pa.

An annual rate increase estimated at $7,790 for 701 subscribers of its Beach Lake, Galilee, and Callicoon, Pa. exchanges was proposed by the Big Eddy Telephone Co. of Narrowsburg, N. Y., to the Pennsylvania Public Utility Commission on Mar. 17.

The new schedule of rates filed with the commission compares with present rates as follows:

	Old	*New*
One-party residence	$3.75	$4.75
Multi-party residence	2.75	3.50
One-party business	5.50	7.25
Multi-party business	4.25	5.25

No multi-party line service is now furnished in the Callicoon exchange.

Allow Purchase, Stock Issue for Ga. Company

The Georgia Public Service Commission on Mar. 19 approved the purchase of the Vienna Telephone Co. by the Vienna Telephone Co., Inc.

The Independent's former owner, Mrs. Nellie Turton sold the company to Tommy C. Smith.

The new company also was permitted to issue 1,750 shares of common stock at $100 par value.

Upon consummation of proposed REA financing, the Vienna Telephone Co. Inc. will be merged into the Citizens Telephone Co., Leslie, of which Mr. Smith is president and sole stockholder.

Since 1950, Vienna company stations in service have grown from 319 to 707.

Michigan Bell Releases Upper Limit of Rate Request

Michigan Bell Telephone Co. told the Michigan Public Service Commission on Mar. 20 that a maximum of 25 million dollars would be the upper limit of the open-end rate increase it recently requested (TELEPHONY, Mar. 28).

The commission, it was reported, had pressed the company to name a specific amount of new revenue needed.

The company's petition said Bell's margin of return on investment is running about 5.8 per cent. In its ruling last year on a rate increase for the company, the commission reportedly said the investment return should be 6.6 per cent.

U. S. High Court Upholds Dynamite Plot Convictions

The U. S. Supreme Court on Mar. 30 upheld the federal conviction of two Chicagoans for conspiracy to dynamite government-controlled telephone lines, even though they were punished under a state law for the same act.

The court's opinion, delivered by Justice Brennan, was the latest of a long line of rulings that both state and federal penalties may be imposed for the same action.

The vote was 6 to 3, with Chief Justice Warren and Justices Black and Douglas dissenting.

Louis Joseph Abbate and Michael Louis Falcone were convicted of conspiring to blow up Southern Bell Telephone & Telegraph Co. lines in Jackson, Miss., an outgrowth of the 1955 strike against Southern Bell by the Communications Workers of America.

Abbate and Falcone were first prosecuted under Illinois law in criminal court in Chicago, the city where the dynamiting scheme was hatched. They pleaded guilty and drew sentences not exceeding three months.

They were indicted later by a federal grand jury in Mississippi.

On the federal conviction, Abbate received a three-year jail sentence and a $1,000 fine. Falcone drew one year imprisonment but no fine.

The state proceeding dealt with an offense against private property, the federal action with destruction of facilities controlled by the United States.

They argued on appeal that the federal conviction violates the Constitution's guarantee against double jeopardy.

The plot to dynamite installations in Mississippi came during the violence-plagued strike of CWA against Southern Bell. Abbate attempted to collect a $5,000 reward offered for information concerning destruction of Southern Bell property by contacting W. J. Peak, Illinois Bell assistant vice president, in Chicago.

This was after he had sent Norman D. McLeod, an ex-convict, to Mississippi

with a suitcase full of explosives and maps of Southern Bell installations.

A police trap was set resulting in the arrest of Abbate, Falcone, an ex-convict, McLeod, and James Shelby, international CWA representative. Later Charles G. Perry, president of the Jackson, Miss. CWA local, also was arrested. McLeod testified for the government in the trial. All others were convicted.

The U. S. Court of Appeals in New Orleans reversed the conviction of Shelby and Perry. No attempt was made to retry Shelby and Perry, pending outcome of the supreme court case.

In 1957 CWA paid a record $315,000 to settle Southern Bell's suit for damages to telephone property which occurred during the strike (TELEPHONY, Feb. 16, 1957, p. 38).

U. S. Supreme Court Denies California Rate Appeal

The United States Supreme Court on Mar. 23 dismissed an appeal by the cities of Los Angeles and Long Beach from a California Public Utilities Commission order granting telephone rate increases (TELEPHONY, Jan. 25, 1958).

The cities charged that the state commission granted interim increases to the Pacific Telephone & Telegraph Co., to General Telephone Co. of California and to the California Water & Telephone Co. without notice or adequate hearings (TELEPHONY, Sept. 13, 1958).

The California Supreme Court denied a review.

In a brief order, the United States Supreme Court said: "The motions to dismiss are granted and the appeal is dismissed for want of a substantial federal question. Mr. Justice Black is of the opinion that probable jurisdiction should be noted."

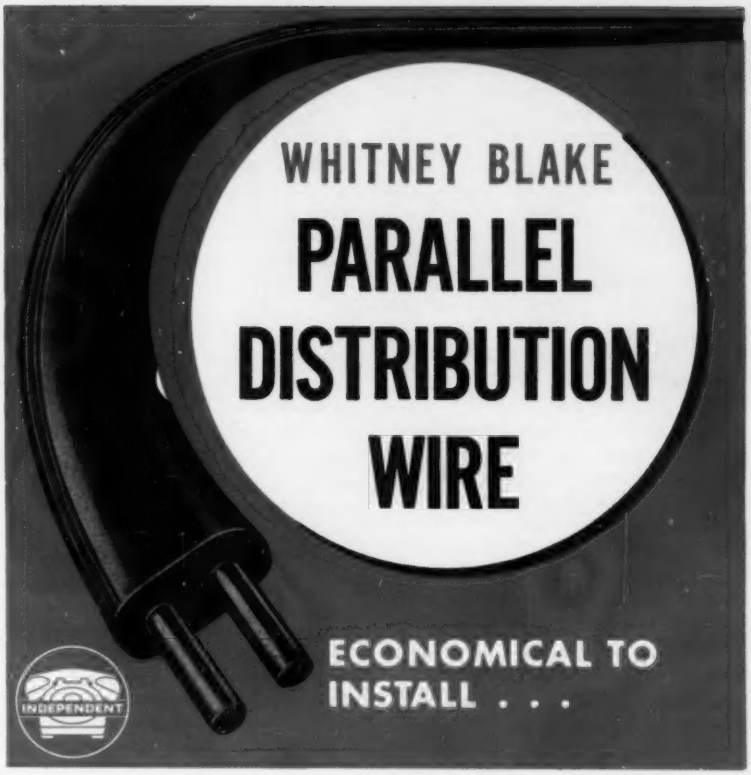
Los Angeles City Attorney Roger Arnebergh charged that no indication of possible interim rate boosts was contained in the first notice of hearing by the commission on a rate increase asked by Pacific Telephone on Aug. 7, 1957.

When the hearings began on Sept. 25, 1957, Mr. Arnebergh said, Pacific Telephone without prior notice moved for an interim rate increase, and was later joined by the other companies.

The cities, in their brief opposing the motion to dismiss, complained as follows:

"There was no opportunity for the customers of any of these companies adequately to prepare to meet these issues or subsidiary included issues, and a full hearing was not had or completed otherwise upon the issues raised by such motion.

"Nevertheless the commission enter-



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WB Parallel Distribution Wire is made to the same high standards of quality that have maintained Whitney Blake leadership in the Independent Telephone Industry.

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tained and granted such motion, authorizing a $15,000,000 annual increase in the charges of the four companies for their multi-message unit service solely in the Los Angeles area.

"This action by the commission deprived the appellants, and the telephone customers whom they represent in the Los Angeles area, of their properties without due process of law and denied them equal protection of the laws, contrary to the 14th Amendment."

The commission, in a brief calling for dismissal of the appeal, contended that representatives of both Los Angeles and Long Beach appeared at the hearing on the companies' interim rate request on Oct. 3 and 4, 1958.

"The presiding commissioner asked them if they had any evidence to offer in connection with the motion for interim relief, and they replied in the negative," the commission said. "No request for additional time was made."

The commission said full hearings eventually were held by Mar. 6, 1958, when the entire proceeding was closed, and neither Los Angeles nor Long Beach objected to the final decision.

Furthermore, the commission said, cities are creations of the state government "whose power over them is not restrained by the provisions of the 14th Amendment."

The commission added that no one is entitled to prior notice of public utility rate increases.

"Public utility regulation was, historically, a legislative function," the commission said. "Individual citizens could not properly claim that they were constitutionally guaranteed notice or hearing when their own representatives enacted laws fixing or increasing rates.

"When regulatory commissions came into being as agents of the state, they continued to perform a legislative function in the same area."

Reject Rate Rehearing Request in California

The California Public Utilities Commission on Mar. 20 turned down a petition of the California Water & Telephone Co. for a rehearing on its request to raise telephone rates by $1,970,000 a year (TELEPHONY, Mar. 7).

In a decision last Jan. 20 the commission cut the amount to $750,000.

The company contended that the increase authorized by the commission was not enough to meet higher operating costs and declining earnings.

In denying the petition, the commission said only that the company had not shown "good cause" for granting a rehearing.

N. C. Action Defends Right To Raises Under Bond

A bill which would take from telephone companies and other utilities the right to put rate increases into effect under bond while waiting for a hearing before the North Carolina Utilities Commission was killed by the house public utilities committee of the North Carolina Legislature on Apr. 1 (TELEPHONY, Mar. 28).

The bill resulted from action of the Carolina Telephone & Telegraph Co., of Tarboro in putting a 1.5 million dollar rate increase into effect last fall prior to commission approval by posting bond. The increase later was approved by the commission.

Under existing North Carolina law, utilities may do this if they put up enough bond to cover any refunds in case the new rates are later found by the commission to be excessive.

Carolina Telephone was the first large utility in the state ever to take advantage of the law, and utility attorneys in opposing the bill said that the law could prove vital in cases of emergency, when it would be disastrous for the company to wait for months for commission approval.

Oregon Independent Seeks Rate Increase, EAS Grant

Oregon Public Utility Commissioner Jonel C. Hill on Mar. 28 set hearing date limits on the rate increase application of the Malheur Home Telephone Co., Ontario.

The Malheur company also seeks approval of Extended Area Service (EAS) arrangements between its Vale, Nyssa and Ontario exchanges and between its Ontario exchange and the Payette, Idaho exchange of Mountain States Telephone & Telegraph Co.

Two Nebraska Companies Ask Sale Approvals

The Benkelman Telephone Co. asked the Nebraska Railway Commission on Apr. 1 for permission to purchase the Max Telephone Co. The Benkelman company serves 790 subscribers and the Max company 32 subscribers.

A hearing was to have been held Apr. 9 by the Nebraska Railway Commission on the proposed sale of the Farmers Independent Telephone Co., of Red Cloud, to Francis P. Darnold of Hastings. Grace Wolfe is the present owner.

Asks to Up Rates in Pa.

Lackawaxen & Hawley Telephone Co., Dingman's Ferry, filed with the Pennsylvania Public Utility Commission on Mar. 6 an application to increase its rates by $3,770 annually, to be effective May 1.

N. C. Franchise Bill Reported Favorably to Legislature

The house utilities committee of the North Carolina Legislature on Apr. 1 gave a favorable report to a bill which would validate previous agreements between municipalities and telephone companies under which the towns have been receiving free or reduced-rate telephone service in exchange for rights-of-way, franchises and other privileges (TELEPHONY, Mar. 21).

The North Carolina Utilities Commission last year ordered Carolina Telephone & Telegraph Co., of Tarboro to discontinue offering such service, and the municipalities involved have appealed the decision to the courts.

The bill just approved by the legislative committee would require the commission to adopt uniform agreements in the future to eliminate any possible discrimination among municipalities.

General Telephone Lists Common Stock for Sale

General Telephone & Electronics Corp. filed on Mar. 31 a registration statement with the Securities & Exchange Commission to register 800,000 shares of common stock for sale to the public through underwriters late in April.

The principal underwriters will be Paine, Webber, Jackson & Curtis; Stone & Webster Securities Corp.; and Mitchum, Jones & Templeton.

The funds raised through the proposed sale of these securities will be used for 1959 expansion of facilities and other corporate purposes.

Neb.: Getting Toll Service Falsely Is Misdemeanor

The Nebraska Legislature on Apr. 1 passed a bill making it a misdemeanor to obtain long distance telephone service through fradulent means. It provides a penalty of not more than $500, or imprisonment in the county jail for not more than six months, or both.

The bill in part reads as follows:

"Any person who shall obtain or attempt to obtain telephone service by the use of a false, revoked, counterfeit or nonexistent card, or who shall obtain or attempt to obtain telephone service by charging the price or toll for such service to a false or nonexistent telephone number, or to an existing telephone number without the authority of the holder thereof, or who through the use of any fradulent scheme or device

shall obtain or attempt to obtain the transmission of a message by toll telephone service without payment of the lawful charges therefor, shall be guilty of a misdemeanor . . ."

New York Company Asks Permit to Raise Rates

The New York Public Service Commission on Mar. 31 accepted a tariff amendment filed by Spencer-VanEtten Telephone Co., of Spencer, designed to increase its rates effective Apr. 1. The company provides magneto service to 864 subscribers.

In filing its new tariff, the company reported an operating loss of $5,630 for 1958 and said its expenses during the year ending Mar. 31, 1960 will exceed those of last year by about $11,000. The new rates are expected to produce about $10,700 additional annual revenue.

Ohio Company Petitions Commission for Increase

The Eastern Telephone Co. application for a rate increase was to have been heard on Mar. 31 by the Ohio Public Utilities Commission.

Eastern Telephone, which is owned by the Telephone Service Co. of Ohio, Lima, has asked for a rate raise of 25 per cent. Eleven exchanges would be affected by the proposed increase.

Canada Opens Civil Defense Communications Network

A coast-to-coast communications network for Canada's civil defense organization was tested and approved on Mar. 31 prior to being officially turned over to civil defense authorities on Apr. 1, according to Hon. C. C. Williams, minister in charge of Saskatchewan Government Telephones.

Civil defense authorities, participating with the member companies of the Trans-Canada Telephone System, tested the network from Victoria, B. C., to St. John's Newfoundland. The network was engineered to provide inter-communication facilities at principal points along the 5,000-mile route.

Designed to give maximum communications facilities at minimum cost, the system uses existing long distance telephone circuits from coast to coast in Canada. The system can be energized whenever necessary.

Main base for the system is St. Hubert, Que., where the senior warning control officer of the civil defense organization, works closely with the personnel of Air Defense Command headquarters. From the control room, the civil defense control officer can, in the event of an attack, order the system energized through the Bell Telephone Co. of Canada at Ottawa. Circuits are then connected with all civil defense co-ordinators at the provincial capitals and other air defense control centers in Canada. In the provincial capitals, other circuits are established by telephone personnel to connect the civil defense offices in the principal cities in the province.

Once the circuits are energized, the senior warning control officer at St. Hubert can dispatch information to all or any one of the points on the entire circuit. They, in turn, can relay information back to him in the event of a local attack or emergency.

Hamil Tells REA Borrowers Give Safety Priority

REA Administrator David A. Hamil has urged the managers and directors of the agency's 1,636 electric and telephone borrowers to make safety a priority program.

In a letter he sent to all systems financed by REA, Mr. Hamil called it a "deplorable record" that 30 employes of electric systems lost their lives in on-the-job accidents during 1958. This was the highest number of fatalities suffered by the systems since 1949. He added that six more deaths already have been reported this year.

"Studies of accidents on borrower systems indicate that the cause of far too many can be traced to indifference to safety on the part of management," the REA administrator said in his letter.

Calling on all REA borrowers to join in making safety a priority program in the rural utility business, he urged each board of directors to review current safety programs at the next meeting and to make sure that management is exercising "appropriate direction and control."

Ark. Commission Approves General of SW Stock Sale

General Telephone Co. of the Southwest has received permission from the Arkansas Public Service Commission to sell 6 million dollars worth of its preferred stock (TELEPHONY, Mar. 21).

The stock issue will consist of 300,000 shares of cumulative preferred stock at $20 a share. The commission has stated that the stock must pay an annual dividend of $1.02 a share.

OK Raise in Illinois

The Illinois Commerce Commission on Mar. 20 authorized the Bath Telephone Co. to increase rates for telephone service in Bath and Kilbourne by $2,370 a year.

Grant 7 Rural Telephone Loans Totaling $1,390,000

SEVEN telephone loans were approved by the Rural Electrification Administration during the week of Mar. 23 as follows:

Butler (Ala.) Telephone Co.; $343,000; Mar. 23.

These and funds from prior loans will be used by the company to provide facilities to furnish initial service to 662 subscribers. The borrower plans to create a new automatic exchange at Pennington.

REA loans to the Butler company now total $727,000 which will enable it to provide new and improved service to 1,470 subscribers through the Butler and Pennington exchanges. Approximately 725 subscribers are now receiving dial service from the Butler exchange.

D. W. Barber is both president and manager of the Butler company.

•

Elizabeth (La.) Telephone Co.; $237,000; Mar. 23.

This will enable the company to serve 440 new subscribers, of which 334 are located in territory which has recently been certified to the borrower. The loan will also finance facilities to furnish automatic mobile radio-telephone service, and to complete the authorized system.

A new automatic central office is scheduled at Pitkin. The borrower also plans service without toll charge between the new Pitkin exchange and its Elizabeth exchange.

REA loans to this borrower amount to $672,000 which will make possible new and improved service to 1,427 subscribers. Exchanges of the system will be located at Elizabeth, Sugartown and Pitkin.

Mrs. Margaret Petmecky is president of the Elizabeth company and Mrs. Helen Sigler Prevey is manager.

•

Home Telephone Co., New Haven, W. Va.; $128,000; Mar. 23.

These funds will enable the borrower

to provide facilities to furnish initial service to 378 subscribers in its area who were not included in prior loans. REA loans to the Home company now total $458,000 which will make possible new and improved service for 1,167 subscribers. The two exchanges of the system—at Letart and New Haven—are now furnishing dial service to approximately 875 subscribers.

Donald F. Roush is both president and manager of the Home company.

•

Dickeyville (Wis.) Telephone Corp.; $30,000; Mar. 23.

This loan is to provide facilities to serve 106 new subscribers in the service area, and to complete the authorized system.

This borrower has now received $130,000 in REA loans which will enable it to furnish new and improved service to 389 subscribers. The Dickeyville automatic office is in operation serving approximately 275 subscribers.

Leon J. Droessler is president and L. J. Robertson is manager of the Dickeyville corporation.

•

Monroeville (Ala.) Telephone Co.; $277,000; Mar. 24.

These funds will enable the borrower to provide facilities to serve 188 new subscribers; expand the Monroeville central-commercial office and toll center facilities, install dispatch radio-telephone service for system maintenance and to complete the authorized system.

The three REA loans to this borrower, totaling $1,154,000, will benefit 3,081 subscribers. The completed system will consist of eight exchanges. Six exchanges are in operation furnishing dial service to approximately 1,000 subscribers.

M. M. Kennedy is both president and manager of the Monroeville company.

•

Thorsby Telephone Co., Montgomery, Ala.; $135,000; Mar. 24.

These funds will enable the borrower to furnish initial service to 234 subscribers in its present service area, and to complete the authorized system. Provision is also made in the loan to install new and larger automatic facilities in the Jemison central office to handle the additional subscribers.

The two REA loans to this borrower, totaling $367,000, will benefit 872 subscribers in the county. The system, when complete, will consist of automatic offices at Jemison and Thorsby.

E. L. Robinson is both president and manager of the Thorsby company.

•

Leaco Rural Telephone Cooperative, Lovington, N. M.; $240,000; Mar. 24.

These funds will enable the borrower to improve service for 26 subscribers and to furnish initial service to 177 subscribers. Fifteen of the subscribers who will receive improved service now receive toll service over 13 miles of line owned by Mountain States Telephone & Telegraph Co. The borrower plans to acquire this line and facilities. The 11 remaining existing subscribers now get toll station service from General Telephone Co. of the Southwest. They plan to become regular subscribers of the borrower as soon as service is available. The Leaco cooperative plans to construct a new automatic central office at Maljamar.

REA loans to this borrower now total $712,000 which will make possible new and improved service for 932 subscribers. The system will have two exchanges of which one, the Tatum exchange, is in operation furnishing dial service to approximately 440 subscribers.

P. H. Harris is president and R. B. Moore is manager of the Leaco cooperative.

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IN THE NATION'S CAPITAL

Continued from page 18

the Detroit-Chicago area, whereby the airplane traveling public can be put into telephone communication via radio with ground stations; (2) the signaling service through pocket receivers worn on the person of subscribers now provided in Allentown and Bethlehem, Pa., and Columbus, O. With respect to the second point, Mr. Bright concluded:

"Although personal signaling service is obviously not a substitute for full two-way service it meets a need for a minimum type of personal communication at relatively low cost. Because it can be operated interspersed with mobile telephone calls it provides a greater total of communications within a given area within the same amount of spectrum space."

Mr. Huntley dealt mostly with the technical phases of Bell System radio frequency requirements. His testimony contained a number of very interesting exhibits, including a color chart breakdown of the radio spectrum from 25 to 890 megacycles. He said that the Bell System is prepared to take the following steps: (1) Develop, in company with others, studies and programs necessary to make mobile service an integral part of the whole toll and exchange network; (2) undertake an orderly program for moving present mobile radio-telephone operations to a proposed new frequency range from its present allocations as the new frequencies become available; (3) work closely with all people who are interested in producing mobile units, sharing the "know-how" freely but not getting in directly to the design or production, sale or service of mobile sets, public or private.

Paul W. Blye, for Bell Telephone Laboratories, described common carrier mobile service as it exists today and its future needs. His testimony was rather technical, but accompanied by some very clear illustrative exhibits of how mobile services work or can work under different conditions. With respect to future possibilities, Mr. Blye stated:

"As previously indicated, we should expect, as the first phase of our development program, to make available to telephone companies at the earliest possible date, a coordinated mobile radio system providing about 200 channels of good quality. In addition to mobile radio service to vehicles, this system will also provide much needed facilities for public correspondence to airplanes, and even for maritime radio service. In addition, personal radio signalling, such as Mr. Bright has described, can send signals interspersed among telephone calls, with very small

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High strength alone is not enough to insure dependable performance in a telephone line wire. The wire also must have high fatigue endurance to provide the margin of safety so necessary in long-span construction. *Crapo* HTL-135 Telephone Line Wire combines high tensile strength and high fatigue endurance with excellent transmission quality to make it the most reliable and economical conductor available for rural subscriber lines. Time and time again, this rugged wire has proved its ability to withstand heavy ice and wind loads, severe temperature changes, vibration and shock damage. The reason is that *Crapo* HTL-135 is tailored to do the job for which it is intended and to do it at the lowest cost commensurate with sound engineering practice.

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effect on call-handling capacity. Such a system will furnish service to some 5,000 customers in a single area.

"Our experience has been that the public is quick to recognize the merits of a high-quality communication service and we should expect the number of mobile customers to expand rapidly. Paralleling the Phase 1 development, therefore, we should expect to embark upon Phase 2 of our program by expanding research and exploratory development effort directed toward a more sophisticated system, providing at least 1,000 channels, to serve many more customers. . . ."

Under the Hawaiian Moon

Now hear this—all you radio and telephone guys and gals over there in our brand new beautiful baby of the Union — Hawaii! The Navy Department has announced that it is going to start direct radio-telephone communications between Washington and Pearl Harbor *via the moon!* The announcement was made in Washington on Apr. 1, which tempted this cynical correspondent to check back with Navy, to be sure the story was not somebody's weird idea of an April Fool joke. But, it is on the level, not just moonbeams or loony talk.

Says here, in this navy release, that the Washington-Hawaiian link will be established some time during the coming year. The new communication system is described as virtually jam-proof, with a greater capacity than conventional radio links. Theoretically, officials say, the system could handle all the military communications between Washington and the military command center in the Pacific.

The moon-relay communications system is the outgrowth of nine years of research by the Naval Research Laboratory into the feasibility of reflecting radio and radar signals off the moon. It will work like this: Radio signals will be transmitted from large saucer-shaped antennas 24 feet in diameter. The signals will bounce off the surface of the moon and be picked up on similar parabolic antennas in either nearby Maryland or in Hawaii. The radio signals will take two seconds to make the 460,000-mile round trip to the moon and back. The distance between Washington and Pearl Harbor is 4,519 miles.

The transmitting and receiving stations are now under construction. The mainland transmitting station will be at Annapolis, Md., and the receiving station at Cheltingham, Md., about 15 miles south of Washington. Two similar stations will be at Wahiawa and Opana on the Island of Oahu.

The system has one limitation. Add to those songwriter words "June," and "spoon," which rhyme with "moon," the radio technician's word "attune." Radio contact can be maintained only as long as the moon is in sight of ("attuned" to) both Annapolis and Hawaii. The time of radio contact every day will vary from four to 14 hours, depending on the orbit of the moon.

What the import or significance of this on commercial communication service will be, is not apparent. So far, this proposed Hawaiian-Maryland axis seems to be strictly a military alliance. But it is clear that this communications business is getting to be more and more out of this world.

Eight States Urge Excise Repeal; 74 Bills Offered

The USITA *Bulletin* of Apr. 3 reported that eight legislatures have now adopted resolutions memorializing Congress to repeal the Federal Excise Tax on telephone service. States represented in this group are West Virginia, Georgia, South Carolina, Illinois, Arkansas, Rhode Island, Oregon, and North Dakota.

In all, 74 bills have been introduced in Congress to repeal the excise taxes, reduce them by 50 per cent, or propose a June 30, 1960 termination date.

Answers To Questions On Page 20

(1) If a local conference call is received, and your office is equipped with a local conference bridge, complete these calls from your office. Record the necessary details on a conference ticket in the usual way except it is not necessary to enter any details in the diagonal spaces on the ticket.

(2) No, it is no longer necessary to say "Do you know the number?"

(3) On a call which the subscriber can dial himself, proceed as for dial assistance operators. On any other call, do not accept the call but say for example, "Station-to-station calls to (called place) are handled by your operator. Will you hang up for a moment, please, and then give the call to her?"

(4) A charge may be transferred to a third telephone anywhere in the United States or Canada without reaching that telephone to secure acceptance of the charge.

(5) If the "bill to" place is outside of your toll center area, enter in full the names of the calling and called places and the name of the place where the third telephone is located.

TELEPHONE TO SCHOOL

Continued from page 32

available in the way of teaching aids in their classrooms.

"It's the best investment this company ever made in public relations," said Dan Schaefer, general manager for the DeKalb-Ogle company. Enthusiasm for the program by teachers has come to the desk of the company's president, S. F. Tremayne, too, in the form of letters thanking the company for making the program available.

Origin of the program began when the Baltimore (Md.) Department of Education surveyed businessmen asking what points should be stressed in high school training to make new employes more effective. Responses to the department's questionnaire revealed that while many graduates are well trained in most business matters, they do not know how to use the telephone properly. This shortcoming not only lessened their immediate value as employes, but limited long-range opportunities for advancement.

As a result of this survey the Baltimore Department of Education requested a training program and with the cooperation of the Chesapeake & Potomac Telephone Co. the Teletrainer program was pioneered. Pioneer work in the program also was going on in other states—Ohio, New York and Michigan.

This program for teaching use of the telephone in business situations received unusual publicity when an article by a department head in the Cleveland (O.) school system appeared in the *Business Education World* magazine in 1953. This article stimulated letters from educators in many parts of the country asking how this newly-developed training material might be obtained.

Later, the Teletrainer program was displayed at a national teachers' convention. High interest by educators at the convention was followed up when they got home by their requests to their telephone companies for use of the material. This enthusiasm was gratifying. But, mixed with the reaction was the problem of distributing the equipment.

Not all telephone companies felt they had the need to justify the purchase of the equipment. (Cost of the unit is $260 plus 26 cents for each set of student instruction and practice material.) An unusual solution to the problem is now underway in Illinois where the Illinois Telephone Association is meeting the demand through one of its existing committees.

When the unexpected demand for the

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SPOTTING OF CONDUIT ALONG RIGHT-OF-WAY ADJACENT TO PROPOSED TRENCH

NOW AVAILABLE IN ALL THESE SIZES: 2, 4, 6, 8 and 9 DUCT

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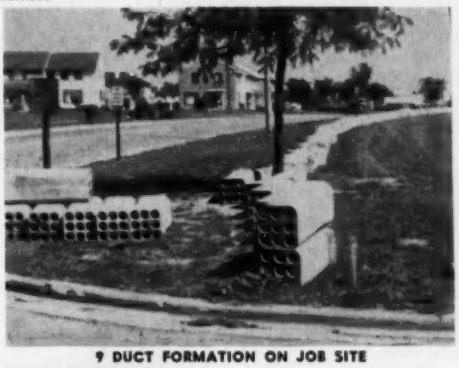

9 DUCT FORMATION ON JOB SITE

STRONG

Pittsburgh Testing Laboratory tests show: compressing strengths of 10,000 lbs. PSI; water absorption of 3.9%; load test-failure at 74,000 lbs. From a telephone company report on Condex multiple-duct concrete conduit—"it is obvious that no trouble was experienced in cable placing operations, no evidence of excessive abrasion on the lead sheath." Smooth bore is obtained by mechanical honing.

ECONOMICAL

Multiple-Duct Concrete Conduit is manufactured with a bell-end joint, eliminating the use of plastic or mortar bandages with dowel pins, for joining. A joint sealing compound, applied with a pressure gun, is all that is needed and cost of this joining operation is less than 3½c per trench foot for both material and labor.

Single crews have installed 1,600 to 1,800 trench feet of conduit per 8 hour day, with two to three less men than with other types which require mortar bandage joints.

Breakage factor of concrete conduit is less than 1%, due to strength of product.

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Teletrainer program came into Illinois telephone companies from teachers, the Illinois Telephone Association asked its Industry Coordination Committee to examine the problem to see if a solution could be found.

One of the first problems the committee discovered was that the telephone companies didn't know what the program was.

The committee's first line of attack then, was to take the equipment to the association's district meetings and introduce the program to telephone men. One of the first meetings for this purpose was held at Mattoon, Ill. The equipment was set up in advance of the meeting and an early arrival, Ancil LeFever, vice president of the National Trail Telephone Co. of Altamont, Ill., found the equipment to be a pleasant surprise.

Before he had left for the meeting the principal of an Altamont school had called to ask if the company could hook up two telephones with a loudspeaker. A commercial teacher in the school wanted to teach her students proper business telephone usage and wanted to use real telephones.

After the Mattoon meeting the Teletrainer equipment was loaned to Mr. LeFever to take to the school. This accidental event pointed to a solution to the problem. The committee proposed to buy six Teletrainer units and loan the units to telephone companies which had a need for it. The program began in January 1959, and according to the Illinois association's Industry Coordination Committee chairman, M. A. Kugler, who also is president of the Okaw Commercial Telephone Co., of Okawville, Ill., the committee has been successfully meeting the demand. And gratifying to the affable and hard-driving Kugler and his committee is the response teachers have made to the program.

"Well received and appreciated . . . wonderful as a teaching aid," wrote Teacher W. D. Sergeant of the Metamora (Ill.) Township High School.

* * *

"The Teletrainer is an excellent instrument to teach the proper use of the telephone," said G. Blaine of the Rosiclare (Ill.) High School.

* * *

"I believe that the training gives them a feeling of their responsibility about its (the telephone) use," commented Mrs. Louise Sherwin, Unit District No. 312, Milledgeville, Ill.

Reason for the popularity of this program among high schools is the flexibility and reality that the equipment gives to teachers and students. Usage of the Teletrainer units by schools in the DeKalb-Ogle company, for example, has not been confined to business education courses. It has been used in English and speech classes to give students a chance to listen to and correct not only their telephone usage, but their expression and grammar.

One of the more cogent reasons for the program's popularity was expressed by the Hinkley-Big Rock teacher, Mr. Emmons:

"We have adding machines, reproducing machines, typewriters and other office equipment in the class which students will be using when they go into office work. They have an opportunity to become more proficient with these machines through practice usage.

The Teletrainer gives students an opportunity to use the real thing when it comes to learning how to use a telephone in a business situation, and you can't beat realism as one of the best methods of teaching."

EDITOR'S NOTE: *State telephone associations interested in the Teletrainer program may obtain further information by writing to J. G. Hardy, Secretary, Illinois Telephone Association, 516 E. Monroe St., Springfield, Ill.*

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MERCHANDISING

Concluded from page 38

the job of being a responsible citizen, Mr. Clark warned.

"As a business leader in your town or city, you have accepted the responsibility of building your company. It is equally important that you accept also the responsibility of building your community," Mr. Clark told the Texas telephone representatives.

He observed that any businessman owes at least 10 per cent of his time to participation in activities that help build and maintain his community.

Mr. Clark's address was published in full in the Apr. 4 issue of TELEPHONY.

The convention re-elected directors as follows:

W. S. Bain of San Antonio, Oscar Burton of Tyler, Marion A. Clay of Lufkin, E. H. Danner of San Angelo, D. G. Gardner Jr. of Nocona, R. A. Goodson of Dallas and W. G. Winters of Houston.

Other directors are:

Fabian Bearden of Baird, Morris S. Burton of Tyler, J. T. Chambers of Beaumont, Dee Cole of Greenville, D. H. Comparette Jr. of Kerrville, Cliff R. Dowd of Hawkins, Claud H. Gilmer of Rocksprings, Charles A. Hendrix of Brazoria, J. B. McDuff of Crockett, C. G. Mendenhall of Anahuac, H. Y. Price Jr. of San Marcos, A. L. Robb of Electra, Guy Smelser of Bogata and D. T. Strickland of Brownwood.

The directors re-elected officers as follows: President, Mr. Gardner; first vice president, Mr. Clay; second vice president, Mr. Bain; treasurer, Pam D. Grinstead of Kerrville, and executive secretary J. B. Haley of Austin.

United Telephone Reports Four Promotions

George A. Hearne, vice president and general manager for the United Telephone Cos. of Arkansas, Kansas, and Missouri, subsidiaries of United Utilities, Inc. of Abilene, Kan., recently announced four management promotions and transfers.

Elvin Durr, buildings and central office equipment engineer, has been promoted to the newly created position of chief engineer for the three companies.

Mr. Durr has been with the United System for 31 years. He is a 1926 graduate of Pittsburg State Teachers' College, Pittsburg, Kan., holding a degree in electrical engineering.

His first position with the United System was as local manager at Fairfax, Mo., in 1928. Other positions held

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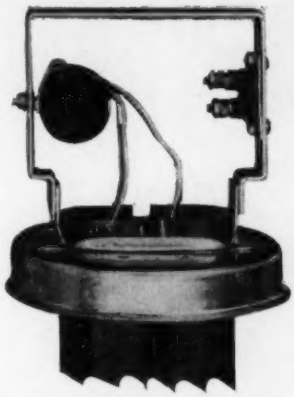

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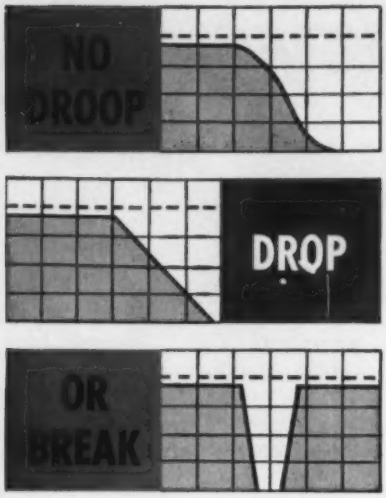

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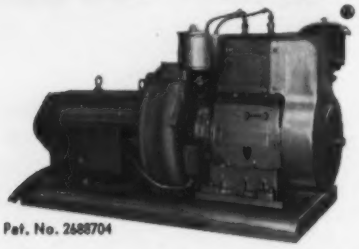

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OSHKOSH, WISCONSIN

by Mr. Durr have included those of area manager at Hopkins, Mo.; district manager at Mound City and Clinton, Mo.; and division plant superintendent at Clinton, Mo.

He was transferred to Kansas City in 1956 as buildings and central office equipment engineer, which position he has held until his recent promotion.

ELVIN DURR

John Herdt Jr. has been named plant superintendent for the three companies. Mr. Herdt was first employed by the United Companies at Russell, Kan., in 1943 as a lineman.

In 1944, he joined the Merchant Marines and served for the duration of World War II. Afterward, he returned

JOHN HERDT JR.

to Russell where he served as a troubleman until 1953 when he was promoted to the position of equipment supervisor.

In 1956, he was transferred to Kansas City, was promoted to the position of assistant plant engineer, and later to plant engineer, the position from which he moved up to plant superintendent.

Named to the position of transmission engineer for the companies is Fred Thorn, formerly purchasing agent and assistant engineer.

He began his telephone career in 1926 at Burlingame, Kan., advancing through various plant positions, until becoming equipment supervisor at Rolla, Mo., in 1955. He was promoted to purchasing agent and assistant engineer in 1957.

Glen Tuck joins the plant department staff as purchasing agent succeeding Mr. Thorn. He began telephone work in 1948 at Holton, Kan.

After serving with the Signal Corps from 1951 to 1953 during the Korean War, he returned to plant positions in Kansas. He became a combination plant man at Baldwin, Kan., in 1956.

Office and Personnel Changes at Lincoln T&T

Merle M. Hale, vice president of The Lincoln (Neb.) Telephone & Telegraph Co., announced the following organization changes effective Apr. 1.

The company's four district offices were discontinued. Resulting personnel changes are as follows:

Tyler W. Ryan, western district manager, Hastings, moved to general commercial supervisor, general commercial department at Lincoln.

Howard W. Spahnle, eastern district manager, Lincoln, to field commercial supervisor, general commercial department, Lincoln.

Asa B. Waters, district commercial manager, Lincoln, to area commercial supervisor at Lincoln.

Edwin J. Flowerday, area manager at Hastings, to area plant supervisor at Lincoln.

Clyde Burge, district manager at Beatrice, retires Oct. 1; and Charles B. Meshier, central district plant manager at Lincoln, on July 1.

Also, Robert H. Gray, area manager at Nebraska City became area manager at Hastings; Edward A. Ernst, area manager at Plattsmouth, area manager at Nebraska City; Vyrl V. Clark, area manager at Pawnee City, became area manager at Plattsmouth; Richard H. Fischer, exchange manager at Wymore, moved to exchange manager at Pawnee City; James W. Cruichshank, exchange manager at Ashland, became general plant clerk at Lincoln; and Raymond L. Johnson, exchange manager at Friend moved to exchange manager at Ashland.

Francis P. Darnold, district wire chief at Hastings and George B. Keith, district wire chief at Lincoln, became

central office equipment supervisors, general plant department.

Ernest M. Barney, installer-repairman, COE, eastern district, is now installer-repairman, COE, in the general plant department.

The new outside plant supervisor of the general plant department, is Herman M. Studier, formerly general foreman, construction department.

Area headquarters at Pawnee City and Tecumseh are combined into one area with headquarters at Tecumseh.

Exchange managerships are discontinued at Friend, Wymore, Fairmont, Clay Center and Edgar. Plant and commercial work at these places will be directed from nearby area headquarters.

USITA Issues Manual for Company's Defense Planning

A "Guide for the Development of Defense Planning—Independent Telephone Industry" was published in March by the United States Independent Telephone Association.

A comprehensive review of the principal problems to be considered in the development of defense plans, is the way USITA describes this 11-page manual which it prepared in cooperation with the Business & Defense Services Administration (BDSA) of the U. S. Department of Commerce.

The USITA delegated responsibility for preparing the booklet to its National Defense Committee, the present composition of which is: Ralph F. Lucier of Kansas City, Mo., chairman; William C. Henry of Bellevue, O.; L. W. Hill of Tarboro, N. C.; Carl J. Lohman of New York, N. Y., and R. A. Lumpkin of Mattoon, Ill. It was acknowledged that principal credit for the booklet's preparation should go to Mr. Lohman, under the direction of a special task force consisting of Lewis F. Shepherd of Erie, Pa., chairman; representatives of AT&T and the Western Union Telegraph Co.

The industrial defense program of the BSDA was launched under Defense Mobilization Order I-8, Feb. 10, 1954. The authority for this order, which was issued by the Office of Defense Mobilization, stems directly from President Eisenhower's Executive Order No. 10480, dated Aug. 14, 1953, and related orders concerning the role of government and industry in developing measures of defense against enemy attack.

To study the special problems involved in assuring continuity of communications in the event of a national emergency and to prepare a defense planning manual, the BDSA in accordance with a recommendation by its

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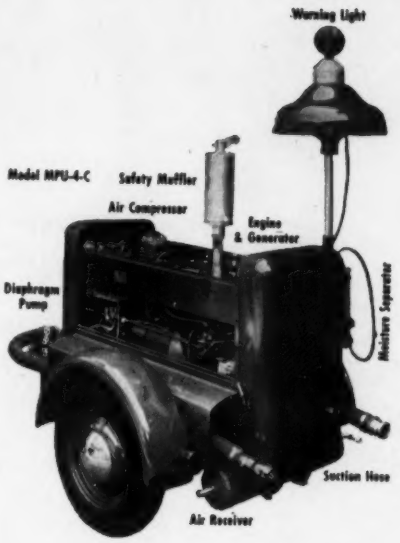
S&G

A POWER AND PUMPING PLANT

THAT GOES ANYWHERE



MOBILE POWER UNIT

- Generator slow speed for quietness
- Pump—Diaphragm type to remove seepage and drain back
- Air Compressor — to put cables under pressure for cutovers or repairs

  Furnished with or without pump and compressor
- 300-Watt floodlight illuminates working area
- operates soldering pot and iron, electric and air tools
- electric blower to ventilate manhole
- supplies dry air for cable cutovers, flash testing, etc.
- diaphragm pump can be operated from manhole by push button control
- buzzer signal for summoning helper
- light, easy to handle

MODEL A Air Compressor Dehydrator

Exchange equipment designed to supply chemically dry air for telephone cables, aerial and underground, this unit can supply as many as 30 cables. The unit is equipped with volume recording air meter, high and low pressure alarm switches, humidstat and hour meter.

- Completely automatic in operation
- Air Purifier to eliminate oil mist
- Incorporates the latest safety devices

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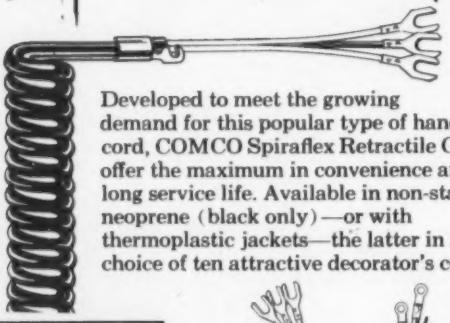
COMCO

Spiraflex
RETRACTILE CORDS

permanently formed for maximum S-T-R-E-T-C-H and positive RETRACTIBILITY

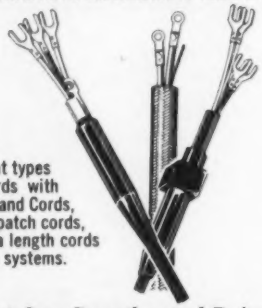


Developed to meet the growing demand for this popular type of handset cord, COMCO Spiraflex Retractile Cords offer the maximum in convenience and long service life. Available in non-staining neoprene (black only)—or with thermoplastic jackets—the latter in a choice of ten attractive decorator's colors.

COMCO

the complete line

Other COMCO Cords include straight types in Switchboard and Operator Cords with Nylon jackets; Receiver and Deskstand Cords, either Neoprene or Plastic... also patch cords, transmitter cords, test cords, extra length cords and cords for inter-communication systems.



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COMMERCIAL CORD COMPANY, INC.

CLIFTON SPRINGS, N. Y.

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QUALITY CORDS FOR ALL MAKES AND TYPES OF TELEPHONE INSTRUMENTS

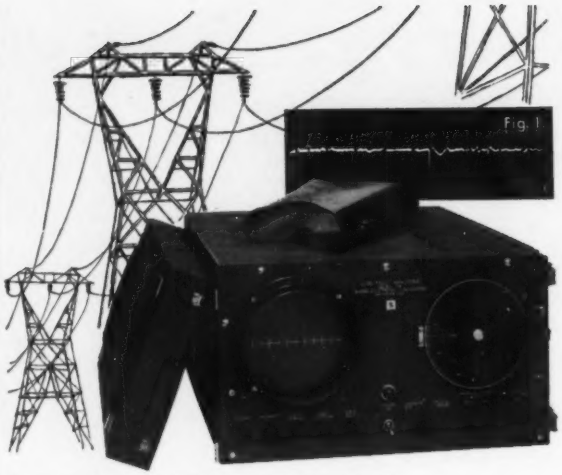


Figure 1. Display of 60 Kv line grounded at 27 miles.

Locate circuit faults exactly ...½ to 200 miles distant

Communication and power lines

Use on any open wire line

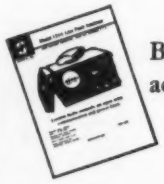
Direct reading, simple to use

Use at carrier terminal, powerhouse, sub-station

Shorts, grounds or opens up to 200 miles away can be located within a few yards with the improved Sierra 124A Line Fault Analyzer. The instrument, operating on radar principles, sends a high amplitude pulse along the line under test. Discontinuities, even capacitors and transformer banks, appear clearly; a complete picture of the line and its condition appears on the radar-type "A" scope.

Two Pulse Widths

To insure maximum readability, two pulses—a 1 microsecond, 1,000 volt pulse or an 8 microsecond, 500 volt pulse—are provided. Other features include a sweep delay, movable distance step, sweep repetition rate of 60 cps and a high intensity flat faced cathode ray tube. Provision is made for camera attachment to the scope face.



Bulletin gives details, actual utility operating experiences

Data subject to change without notice.

Sierra Electronic Corporation

A subsidiary of Philco Corporation

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Sales representatives in Major Cities

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sierra

Domestic Communications Operating Industry Advisory Committee, appointed in February 1958, a task group composed of the above-mentioned official representation from the industry. The USITA points out:

"It is obvious that pre-attack planning is absolutely essential if the industry is to survive enemy attack.

"The nerve system of industrial defense is communications, without which there can be no coordination and direction of defense effort.

"Possible solutions to many of the problems which may be encountered are outlined herein. We are hopeful that this manual will be a useful guide to Independent telephone companies in formulating and putting into effect their plans for defense."

The booklet takes up: continuity of management; emergency headquarters; securing vital records; duplication of records; maintenance of vital records; physical security; long-range planning; security measures and shelters, and restoration of service. It also provides a check list for evaluating the status of defense planning.

Copies may be secured from USITA, 438 Pennsylvania Bldg., Washington 4, D. C.

Party Liners Chat While Aid Delayed for Cal. Man

Party-line sharers in La Puente, Cal., refused to let a woman call for help for her dying husband, it was reported on Mar. 28.

Mrs. Madeline Uranga told sheriff's deputies that she pleaded with the talkers to give up the telephone but they refused.

She said she ran to a neighbor's house and called an ambulance, but 22 minutes had elapsed before she reached the neighbor's telephone.

Her husband, Gene, 48, was dead, apparently of a heart attack on arrival at a hospital.

Deputies investigating the case said it was a misdemeanor to refuse use of a party line during an emergency.

Pakistan-Philippines Link

Pakistan's Posts & Telegraphs Department has established direct radiotelephone service between Dacca, capital of East Pakistan, and Manila, in the Philippines, it was reported recently.

Hanging the Good

"There is no man so good who, were he to submit all of his thoughts and actions to the law, would not deserve hanging 10 times in his life."—MONTAIGNE.

ITT CABLE
RINGS THE WORLD

DEPENDABLE LIFETIME SERVICE

proven by more than 8 billion feet in USE in U.S.A.!

- Used by the country's largest single telephone system
- Unit and layer construction
- Highest quality copper conductor and paper insulation
- Disposable reels—no return charges
- Exceeds all standards of modern telephony
- Backed by both Kellogg and ITT

Ask your Kellogg representative for complete details.

Basic Specifications	26 AWG	24 AWG	22 AWG	19 AWG
Sheath: lead with 1% antimony				
Conductor: pure copper wire				
Conductor Resistance max. ohms/mile @ 20°C	230	145	92	46
Mutual Capacitance 900 cycles A.C., mfd/mile, max.	0.080	0.080	0.090	0.084
Capacitance Unbalance 900 cycles A.C., micro-microfarads	*	*	at 22 AWG: up to 1000′—100; 1001′ to 2000′—150; 2001′ and longer—200	at 19 AWG: up to 1000′—100; 1001′ to 2000′—150; 2001′ and longer—200
Dielectric Strength: 60 cycles A.C., for 2 sec., volts rms				
conductor-to- conductor-to- sheath	355	355	355	500
core-to- sheath	850	1000	1000	1000

Insulation Resistance: not less than 1,000 megohm-miles at 60°F measured with a D.C. potential of 100 to 550 volts.

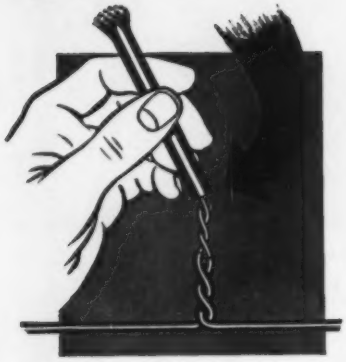
*not required, except if adjacent pairs are found with like lengths of twist when the 900 cycle A.C. capacitance unbalance shall not exceed 400 micro-microfarads.

KELLOGG Communications Division of ITT

Kellogg Switchboard and Supply Company, 6650 South Cicero Avenue Chicago 38, Ill. Communications division of International Telephone and Telegraph Corporation

For complete list of Kellogg offices, see pages 22-23.

"Super-Splice"®
makes splices
waterproof
...from
inside out!



Superior Cable's exclusive economical "Super-Splice" is a plastic splice sleeve. It is sealed at one end and comes to you filled with an insulating and waterproofing compound.*

"Super-Splice" prevents leakage currents and breakdowns in the presence of moisture . . . good for 25,000 v. d. c.

Can be easily removed to re-enter the splice . . . the compound never hardens or oozes out no matter what the temperature.

*A Dow-Corning silicone compound.

"Super-Splice" is available for use with straight, butt or bridge splices.

For further information on economical "SUPER-SPLICE", write

SUPERIOR CABLE
SUPERIOR CABLE CORPORATION
Hickory, North Caroline

KEEPING UP WITH LATEST DEVELOPMENTS

Continued from page 29

This 62-pound portable unit is equipped with a Briggs & Stratton engine which has been converted to propane carburetion. It can be used as a ventilator only, producing 300 to 800 cubic feet of fresh air per minute. In case the workman wants heat while working underground, he can get fresh, heated air in a fraction of a minute. All heated air passes through an exclusive stainless steel heat exchanger which produces from 10,000 to 45,000 BTU's per minute with a 90-degree temperature rise.

This ventilating heater is placed on the street close to the manhole. The 15-foot length of either 6 inch or 8 inch diameter flexible duct is placed so that the end clears the manhole floor by 1 foot. This enables forced fresh air to get at all the corners, thus ridding the area of noxious gases and making the area safe from oxygen deficiency.

•

Dehumidifier. (Fig. 68). This Dryomatic dehumidifier offers protection against moisture damage and provides humidity control in small areas where a closely regulated source of dry air is required. This unit may be installed permanently or moved from place to place to meet special and immediate needs for humidity control. It requires a standard 110 volt ac outlet and a small exhaust vent.

It draws humid air through a standard replaceable dust filter and passes it through a permanent dehydrating agent (silica-gel and activated alumina), then discharges dry air, dust-free back into the room. This is a single-bed unit which works in cycles, drying for a period of 2¼ hours, vaporizing the absorbed moisture for 30 minutes and cooling the desiccant for 15 minutes.

Designed especially for small areas,

Fig. 68. Dehumidifier.

this unit will hold humidity levels as low as 15 per cent, depending on such factors as outside temperature and humidity, frequency of door openings, construction material, and moisture content of items stored in the space.

Current REA specifications make provision for installation of dehumidification equipment in automatic offices to prevent moisture damage to relays and other sensitive components. Maintaining the relative humidity of 60 per cent or less will eliminate costly maintenance and reduce replacement costs. For telephone offices located in regions where the temperature may drop below 65° F., for a considerable portion of each day or during a large part of the year, REA's building specifications provide for the use of an absorption-type dehumidifier such as the Dryomatic dehumidifier.

•

Cable Pressurization System. (Fig.

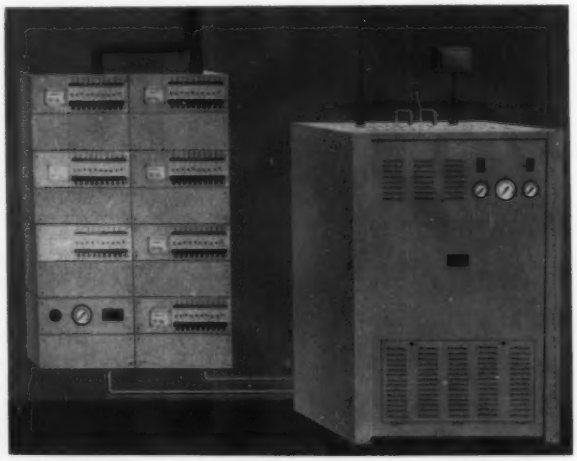


Fig. 69. Cable pressurization system.

69). The Puregas meter panel has been designed for use with continuous feed pressure systems for protecting communication cables from possible moisture entry. Since pressure sources for these systems may be dry air from compressor dryers or cylinder nitrogen, the term "gas" used herein implies either of these sources.

Metering panels are used in conjunction with continuous pressure systems to serve the following functions:

(1) To distribute the gas flow from a pressure source to the various toll, trunk and exchange cables.

(2) To measure the gas flow delivered to groups of cables or individual cables to determine when maintenance is required on the cable plant.

(3) To provide a centrally located, readily accessible grouping of metering instruments for measuring and recording the condition of the cable plant within monitoring range of the instruments.

The Puregas meter panel is designed around two standard metering instruments—the volume recording gas meter and the direct reading air rate indicator or flow meter. These instruments monitor the condition of the large diameter (low pneumatic resistance) portion of the cables near the pressure source. They respond to relatively large leaks near the office and progressively less as the distance from the office increases. They are not responsive to leaks in branch feeders located at considerable distance from the pressure source because of the high pneumatic resistance of such cables and the small volume of gas which can escape.

The volume recording gas meter employed on the panel is a double diaphragm displacement measuring unit rated at 10 psig maximum working pressure. It is equipped with a direct reading cubic foot index which records the gas flow in cubic feet at the pressure delivered to the meter by the pressure source. To determine gas flow at standard conditions for comparative purposes, a conversion is necessary.

The gas meter is used specifically to:

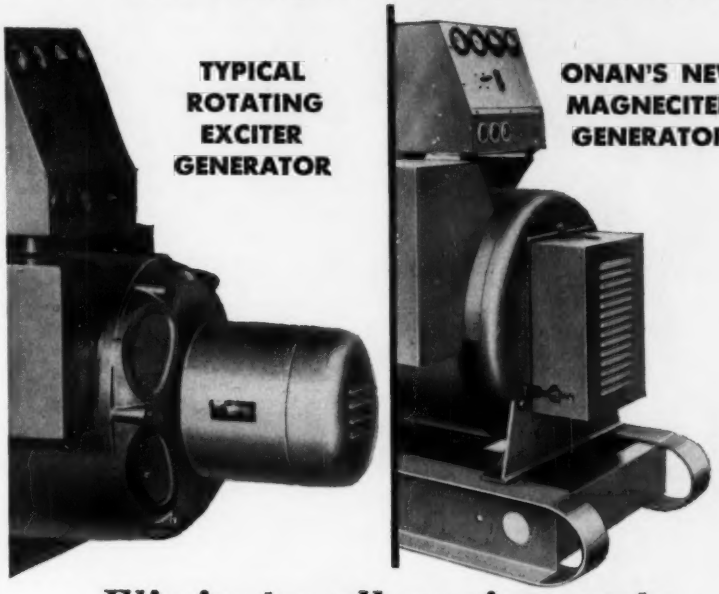
(1) Measure the total output of an air dryer to avoid over-loading the unit.
(2) Measure the volume of gas consumed by groups of cables (or individual cables when required).

Periodic checks of the gas consumption recorded by the gas meter will indicate if changes develop in the condition of the cable system that require attention. A pressure shut-off valve is provided on the inlet side of the gas meter to cut off the flow of gas to each panel when required.

The air rate flow meters are of the

THE "NEW LOOK" IN GENERATOR DESIGN

on large Onan gasoline and diesel plants



Eliminates all moving parts in exciter and voltage regulator

Steps up performance in primary and emergency standby installations

- ✓ ***FASTER VOLTAGE RECOVERY***—Rated voltage is restored within one second after load is applied or removed, compared with 5 seconds for a rotating exciter generator.
- ✓ ***LESS VOLTAGE FLUCTUATION***—Voltage fluctuation with load changes is less than half that of standard-type generators.
- ✓ ***GREATER RELIABILITY***—New design eliminates hundreds of electrical connections, the commutator and its brush rig, and many other "break down" points.
- ✓ ***FEWER ADJUSTMENTS***—No extra sensitive adjustments necessary. Regulator has no delicate multiple contact points.
- ✓ ***EASIER SERVICING***—All exciter and regulator components are easily accessible. No dismantling necessary.

New Magneciter generators are now standard equipment on all Onan Electric Plants of 100, 125, 150, 175 and 200KW, as well as on many smaller sizes. A choice of Diesel or gasoline engine power is available on most Magneciter-equipped models. Complete specifications on any or all Onan units will be sent on request.

Find Us Fast In The Yellow Pages

Onan builds a complete line. Air-cooled gasoline models from 500 to 10,000 watts; air-cooled Diesels in 3 and 5KW; water-cooled gasoline models from 10 to 150 KW; water-cooled Diesels, 10 to 200KW. Also separate generators, D.C. plants, and accessories.

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TELEGRAPH TERMINAL

For High and Low Speed Telegraph Communication

Provides 14 frequency shift telegraph channels in the voice band from 765 to 2975 cps. All essential controls are provided together with an internal 60 MA loop supply for the operation of teleprinters. Equipment is available as a dual transmitter, dual receiver, or transceiver for either simplex, half-duplex, or full-duplex operation. Equipment may be applied to telephone lines, or VHF and Microwave circuits for transmission.

Special Accessories for Telegraph System Applications

The DC Hybrid Accessory HA-8555 will provide for half-duplex telegraph operation with break-in facilities on an all electronic basis. The Party Line Keying Accessory HB-8691 may be used in party line applications where frequency shift keying is desired. The Leg Adapter Panel HB-8690 provides convenient patching facilities and relay keying for neutral and polar operation over DC lines.

WE CAN HELP YOU

Our 35 years of electronic experience is yours for the asking. Send for our New Product sheets fully describing the Model 995 Comtel and various accessories.

Radio Frequency
LABORATORIES, INC.
Boonton, New Jersey, U.S.A.

rotameter type for measuring the instantaneous rate of gas flow to individual cables. The flow meters are designed with a floating double ball index, each associated with its own calibrated scale so that flow rates can be measured either in the range of 0.4 or 1 to 10 standard cubic feet per hour at 10 psig delivery pressure. The double ball design with two scales permits the monitoring of a much wider fluctuation of gas flow rates to individual cables and provides a flexibility unattainable with a one ball meter.

Air rate flow meters are used to supplement the gas meter in monitoring the condition of cables near the pressure source. Sliding metal pointers on the individual flow meters are provided for setting at average gas flow rates which facilitates the observance of excessive flow rates indicative of leaks that require maintenance.

The development of the refrigerator compressor air dryer provides a high capacity pressure source furnishing dry air at rates low enough to permit a much higher gas consumption loss through leaks per mile of cable than was possible with cylinder nitrogen. With this combination of high capacity and low rates, entire exchange cable systems may now be pressurized economically.

•

Heavy-Duty Self-Supporting Tower. (Fig. 70). A heavy-duty tower, self-supporting to heights of 130 feet and suitable for all types of communication needs is now being produced by the Rohn Mfg. Co.

Fig. 70. Self-supporting tower.

The tower, for use in mounting antennas for microwave radio systems, is constructed by using 13 different tower sections of varying size, weight, structural strength and taper. The individual sections can be used in making additional combinations to build self-supporting towers of variable heights and structural capacities so as to fit the particular need as required by the type antenna being used.

It is available in completely hot-dipped galvanized after fabrication finish and is shipped and installed in 10-foot lengths and tapered sections are shipped partially disassembled.

•

Portable Pre-Built Microwave Building. (Fig 71). This portable pre-built building, by Tower Construction Co., is easily and quickly installed in a matter of hours. It rests on massive steel beam supports which easily mount

Fig. 71. Portable pre-built microwave building.

on four concrete piers. The floor remains above ground to prevent dampness. The uprights and roof bows are made of 16-gauge steel. The outside walls are 22-gauge auto (body) steel. The inside walls are ¼ inch ply fir plywood. The flooring is 2 inch x 6 inch hard yellow pine wood, though steel plate is available at extra cost. The door is 3 feet wide complete with drip moulding and three-point lock. The building is undercoated. The outside is painted with three coats of enamel. The inside may be painted or varnished.

Three standard sizes are available: 8 feet x 8 feet x 8 feet high; 8 feet x 10 feet x 8 feet high, and 8 feet x 12 feet x 8 feet high.

(Please turn to page 64)

For telephone line wire

. . . bare or insulated

For rural distribution wire

. . . guy strand or messenger

COPPERPLY®

COMMUNICATIONS WIRE

1. High tensile *precision-drawn* steel core.
2. Precisely concentric *electroplated* copper coating.
3. *Non-porous, rust-proof* coating.
4. Optimum *transverse and linear* uniformity.
5. Accurately balanced circuits.
6. All standard wire sizes from No. 3 to No. 14 AWG.
7. High Strength or Extra High Strength grades.
8. Ideal for long span installation.
9. Either 30% or 40% conductivity.
10. Future carrier circuits without additional line construction.
11. Continuous *non-welded* lengths up to 1,000 pounds.
12. New economies in insulating processes and/or line installation.

Write to National-Standard, Niles, Michigan, for Bulletin 202.

NATIONAL NS **STANDARD**

DIVISIONS: NATIONAL-STANDARD, Niles, Mich.; tire wire, stainless, music spring and plated wires • WORCESTER WIRE WORKS Worcester, Mass.; high and low carbon specialty wires • WAGNER LITHO MACHINERY, Secaucus, N. J.; metal decorating equipment • ATHENIA STEEL, Clifton, N. J.; flat, high-carbon spring steels • REYNOLDS WIRE, Dixon, Ill.; industrial wire cloth • CROSS PERFORATED METALS, Carbondale, Pa.; decorative, commercial, and industrial perforated metals.

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NEOPRENE

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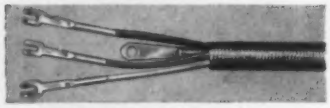

BUY!
COTTON

Are you familiar with the features of these fine cords?

NEOPRENE covered cords are a highly serviceable cord, extensively used in a wide variety of services. They are moisture and grease proof . . . easy to keep clean.

NYLON covered cords are a relatively new development in telephone cords. Their fine smooth texture makes them the preferred cords for switchboard use. They give long service. Preferred by operators because of their fast, easy handling.

COTTON cords are in standard use everywhere. Their fine woven wrap makes them very serviceable for all around purposes.

Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry a large stock of cords for every purpose.

Our geographical location means QUICK SERVICE.

RUNZEL
Cord and Wire Co.
4723 W. MONTROSE AVE.
CHICAGO 41, ILL.

Special sizes are available, as required.

The building is completely assembled, portable and easily delivered either by rail or by truck. It can be installed quickly and easily. The electrical components are completely installed. Only final installation of the building on its piers and field tuning remains as field work. Other equipment, including the generator, can be installed upon request prior to shipment.

Each unit is shipped complete with these electrical items installed at no extra cost:

Four light receptacles with flood lamps.
Three duplex receptacles.
One switch—100 ampere entrance switch.
Twelve breaker panel.
16 foot 4 inch cable duct.
Ten inch fan, hood, and thermostat.

•

Microwave Passive Aluminum Reflectors. (Fig. 72). The reflectors, shown in *Fig. 72*, are two 6 foot x 8 foot models with perforated faces. These reflectors are mounted on a standard pipe mount which supports two reflectors at any one level.

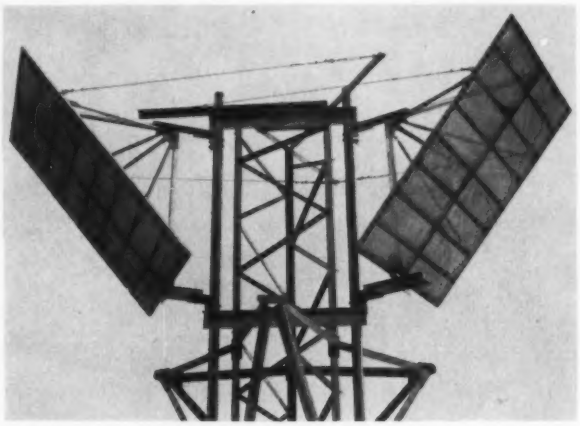


Fig. 72. Microwave passive aluminum reflectors.

They are furnished complete with mounting bolts, guy wire, turnbuckles, guy clips and with a built-in adjustment mechanism for vertical alignment of the faces. The faces are longer in the sloping plane in order to preserve a square surface to the projection from the parabola reflector.

These reflectors are shipped knocked down in a wood crate. Assembly time is one man-hour.

The reflectors are manufactured by Tower Construction Co.

•

Wood Bits. (Fig. 73). Irwin Speedbor "88" wood bits for electric drills and drill presses are now available in four new and larger sizes: 1⅛ inch, 1¼ inch, 1⅜ inch, and 1½ inch.

Fig. 73. Wood bit.

Made with ¼ inch shank and Irwin's exclusive hollow ground point, the larger sizes are designed to bore fast, clean holes in wood, plaster and plastics. There is no wobble or run-out, it is claimed.

The complete Irwin Speedbor "88" line now includes 17 open stock sizes, ¼ inch to 1½ inches.

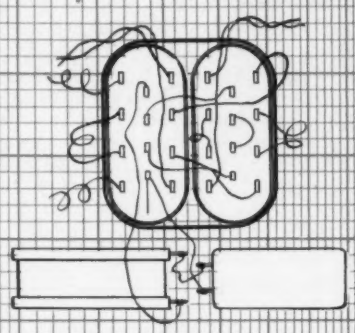
Sets of four, six and 13 wood bits are also available in colorful plastic rolls and molded plastic case.

Create Communications Advisory Group in Venezuela

A National Telecommunications Commission has been created by Venezuela to take charge of planning communications systems, advising on legislation, supervising services offered by the government and private companies, and other duties.

The commission consists of a director, the president of the National Tele-

Acceptance tests are simpler, quicker with Airtronics PORTABLE Test Hybrid



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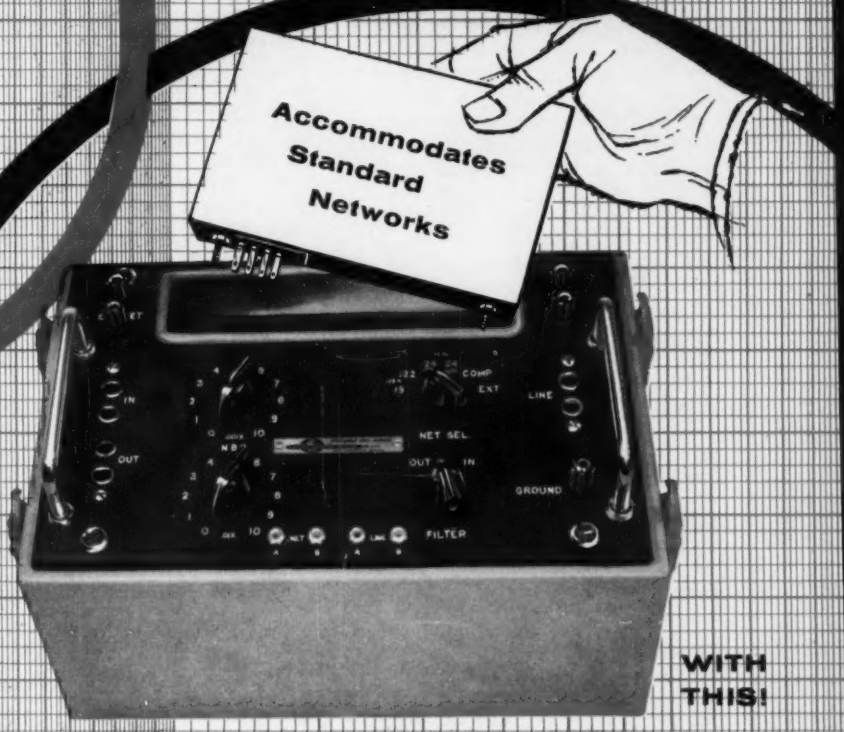
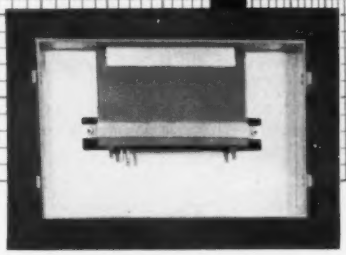


WITH THIS!

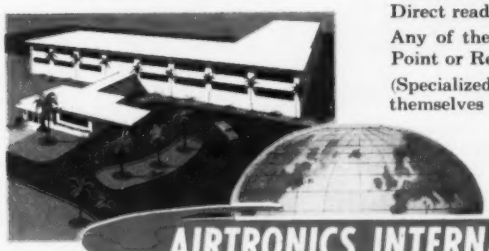


Provision is made for carrying a spare network in the cover.

Portable and DURABLE

Airtronics Portable Test Hybrid is built to withstand the rough handling of normal testing operations. Rugged construction throughout, and housed in heavy-gauge aluminum travel case with handy carrying handle.

Dimensions 8" x 9" x 12"
Approximate Weight 14 lbs.
Economically Priced at $235.00
FOB Ft.Lauderdale, Fla.



TRANSMISSION ENGINEERS and TESTERS:

Here is a test set designed especially for you! A precision test hybrid, packaged for flexibility and convenience. Give your test results the advantage of precision equipment designed for reliability and consistency:

Airtronics Portable Test Hybrid is designed to use standard type 115H or 115AL Precision Networks which are available in all toll offices.

HERE ARE A FEW OF MANY USES:

Cable acceptance tests.
Trunk acceptance tests.
Circuit evaluation.
Direct reading capacity bridge.
Any of the above tests using Singing Point or Return Loss techniques.
(Specialized applications will suggest themselves to you.)

CHECK THESE SPECIFICATIONS

120 P Repeat coil hybrid, specially adjusted for high trans-hybrid balance.
128 type low pass filter.
Precision 1% capacity decades on NBO.
Internal switching provided for two most commonly used networks.
Plug-in network arrangement, compromise net built in.
Line and Net simplex leads brought out to pin jacks on front panel for special testing procedures.
Convenient panel lay-out, jacks and binding posts to facilitate connection to line or external circuits.
600 ohm impedance on 4 wire legs.
900 ohm impedance on line, (simple wiring change for 1500 ohm impedance line).

Modernize your testing procedures with the new **AIRTRONICS PORTABLE TEST HYBRID MODEL 20B**
Precision Network available

A PRODUCT OF

AIRTRONICS INTERNATIONAL CORPORATION

P.O. Box 8576, Fort Lauderdale, Florida (6900 West Road 84)

phone Co., the chief of the engineering division of the bureau of telecommunications, and four appointed members.

Another step toward more efficient operation of the country's communications, it was reported on Mar. 9, is organization by the ministry of communications of a new technical school which replaces the postal school, the telephone & telegraph school, and the air traffic control school, and gives necessary training not previously offered.

Further, the transfer of all services of domestic and foreign long-distance telephone and radio-telephone, together with personnel and equipment, from the ministry to the National Telephone Co., has resulted in improved service.

Following the transfer, announcement was made of the inauguration of 24-hour radio-telephone service, including operation of from four to six channels to New York, and operation of all circuits from Caracas to Maracaibo and Puerto la Cruz.

The ministry now is considering the possibility of contracting for installation of 72 radio-communication channels to various points in the eastern part of the country. It also plans installation of six more radio-telegraph circuits between Caracas and Maracaibo, bringing the total to 12.

First Independent Joins Nationwide DDD in Fla.

Inter-County Telephone & Telegraph Co. of Fort Myers, Fla., recently became the first Independent telephone company in the state of Florida to join the nationwide Direct Distance Dialing (DDD) network, according to J. N. Johnson, president and general manager.

This is another Inter-County Telephone system first, since the company introduced (DDD) within its own intrastate toll network in 1955. This system was the first such Independent long distance convenience in the southeastern United States.

Nationwide DDD is now provided for Inter-County's subscribers in three Fort Myers offices, and also at the exchanges of Fort Myers Beach, Naples, and Punta Gorda.

Over 50 per cent of Inter-County subscribers are now able to dial direct long distance calls to over 100 Florida exchanges and better than 450 points across the nation. In all, over 40 million of the nation's 65 million telephones can now be dialed directly from this Inter-County direct dialing system.

The Sunshine State's first long-haul system is tied into the network with new Strowger automatic toll ticketing equipment, complete with ticket printers and a computer.

This was the first step of a two-step program to provide nationwide DDD to Inter-County patrons. In December 1959, a similar direct dialing system is to be placed into service at the Inter-County Co.'s Avon Park toll center for the Avon Park exchange and also for the exchanges of Sebring, Lake Placid, Okeechobee, Fort Meade, Bowling Green, and Wauchula.

Since the Fort Myers SATT cut-over, Inter-County has handled as many as 3,300 calls in one day. The ticketing equipment, averaging over 3,000 calls per day, is providing relief for seasonally over-loaded toll boards.

The apparatus was particularly helpful during the "Edison Pageant of Light," a busy festival held in honor of Thomas Edison, who formerly resided in Fort Myers.

Radio-Telephone System With U. S. Set for Bahamas

A high-power, forward-scatter, radio-telephone terminal for Nassau, part of a link connecting the Bahamas with the U. S. nationwide telephone network, is planned for completion this year.

Standard Telephones & Cables Ltd., London (an ITT associate) is the company which will do the work. They will also install a multi-channel VHF radio-telephone network to connect Nassau with the tourist centers in the Eleuthera Islands (neighbors of the Bahamas). The total value of the contract is about $700,000.

Up to 72 trunk telephone circuits will be carried over the single 180-mile over-water path between Nassau and Florida. The Nassau scatter terminal equipment will be manufactured in London and will interwork with a similar terminal situated near Florida City.

The proposed VHF radio-telephone network will comprise three links and include three exchanges with a total of seven switchboard positions. One 24-circuit telephone link will connect Nassau with Governors Harbor in the Eleuthera Islands, a distance of 60 miles over water.

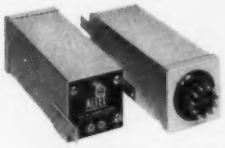
The other two links, each in the Eleuthera Islands and each over a distance of 20 miles, connect Governors Harbor with Rock Sound and Governors Harbor with Harbor Island. Each of the two links will be equipped with six telephone circuits but will have an ultimate capacity of 12 circuits.

The complete installation is expected to be in operation by the end of 1959.

ALTEC TELEPHONE EQUIPMENT

Compact · Versatile · Easy to Service

The advanced design of ALTEC telephone equipment makes it ideal for modern telephone systems. In addition to its reliability and high standard of performance, ALTEC equipment requires a minimum amount of space. Inherent flexibility makes it useful in a wide range of applications. Easy maintenance is designed in to save time and money in servicing.



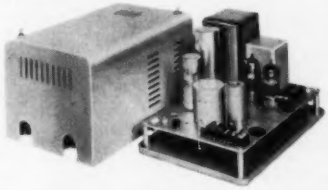
447A TRANSISTOR AMPLIFIER
Telephone Repeater Type

Directly interchangeable with vacuum tube repeaters; dimensions are identical. Requires only 24 - 48 volts. Eliminates need for 130v supply.

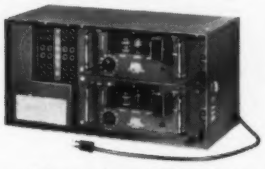
SPECIFICATIONS:
Type: Repeater Amplifier (transistorized) • Gain: 37 db from and into 600 ohm loads • Power Output: +18 dbm (at +10 dbm distortion is 1.5%, 300-3000 cps) • Frequency Response: −1 db at 200 and 5000 cps referred to 1000 cps • Input Impedance: 600 ohms • Output Impedance: 600 ohms • Output Noise Level: −70 dbm • Controls: Input volume control which varies gain from −2 db to maximum gain • Power Required: 17 - 24 v (50 ma @ 20 volts) • Transistors: 1 − 2N191, 1 − 2N188A • Dimensions: 1¾" x 1¾" x 6" • Color: Cadmium plate with dichromate finish • Weight: 14 oz. • Mounting: 11 pin Amphenol 86 CPN plug • Monitor Tap: Auxiliary output winding 11 db below 600 ohm winding available at test jacks on front panel and at connector pins at rear of unit • Accessories: Panel for rack mounting 10 repeaters; Rack mounting power supply capable of energizing 100 repeaters; Equalizer; Panel for mounting up to 10 equalizers; Assembly for mounting a 447A in 105B apparatus box.

444B AMPLIFIER
COMPRESSION TYPE

Compression, attack and recovery times are fixed quantities providing optimum performance for message use.



SPECIFICATIONS:
Type: Compressor Amplifier • Gain: 600 ohm input: 70 db • Bridging input: 57 db bridging 600 ohm line • Maximum Compression: 35 db change in input results in 15 db change in output • Power Output: 34 dbm at 30 db compression; 35 dbm with rectifier tube removed • Frequency Response: −2 db at 100 and 3000 cps relative to 1000 cps; More than 10 db down at 10,000 cps • Input Impedance: 600 ohms balanced and 12,000 ohms balanced for bridging • Source Impedance: 600 ohms • Load Impedance: 4 and 600 ohms • Noise Level: 80 db below rated output; −115 dbm equivalent input noise • Power Supply: 117 volts, 60 cps, 30 watts • Tubes: 1−6BC8, 1−6AL5, 2−12BY7A • Dimensions: 9" x 6" x 5" • Weight: 7½ lbs. • Attack Time: 50 milliseconds • Recovery Time: 1 second for 63% recovery • Harmonic Distortion: At 33 dbm output, less than 5%, 200 - 4000 cps; At 30 dbm output, less than 2%, 200 - 4000 cps.



S-17B PROGRAM
AMPLIFIER SYSTEM

Cabinet houses two program-quality 437B amplifiers capable of multiple tandem operation, two 17224 equalizers, and two jack fields to facilitate testing, equalizing, and monitoring. Each amplifier contains its own AC power supply and mounts in the cabinet independently on a plug-in basis for easy replacement and centralized maintenance.

SPECIFICATIONS:
Output Power: +24 dbm • Distortion: not over ½% THD (30 - 15,000 CPS at +24 dbm) • Gain: at least 44 db; adjustable to minimum of 8 db • Gain adjustment: 2 db steps and 1½ db vernier • Frequency response: ±1 db, 20 - 20,000 cps • Equiv. input noise: −115 dbm • Input impedance (internal): 150/600 ohms ±5% • Output impedance (internal): 150/600 ohms ±5% as measured at output of the bridge • Longitudinal balance of input circuit and output circuit with 600 ohm connection: 55 to 60 db at 40 and 15,000 cps; 70 db at 1000 cps • Tubes: 1−12AY7, 2−12BY7A • Electrolytic condensers: Sprague 17D or equivalent • Transformer insulation: 1500 volt insulation between primary and secondary windings • Impendance change simply accomplished by reversing the impedance plug. Occupies 9⅜" of 19" rack space.

For complete information about ALTEC telephone and paging equipment call Graybar.

Famous for Quality and Dependability

ALTEC LANSING CORPORATION
1515 S. Manchester Ave., Anaheim, Calif.

12-59

Patent Pending

TBM SERVICE ENTRANCE MAST for OUTDOOR TELEPHONE BOOTHS

Model TBM Service Entrance Mast provides complete service entrance facilities for outdoor telephone booths with the definite plus advantages of lower cost and easier installation. Raises power lines for specified ground clearance. Looks better, lasts longer, costs less than any comparable installation.

FITS MOST MODELS OF OUTDOOR BOOTHS

MEETS ALL REQUIREMENTS

LOOKS BETTER
The TBM Mast is engineered for the job. Adds to the appearance of any style booth.

LASTS LONGER
Heavy gauge steel tubing used throughout for life-time service. Only heavy duty fittings used.

COSTS LESS
Actual installations show savings up to two-thirds over conventional pole and 4" x 4" installations.

Utility Service Co., Inc.

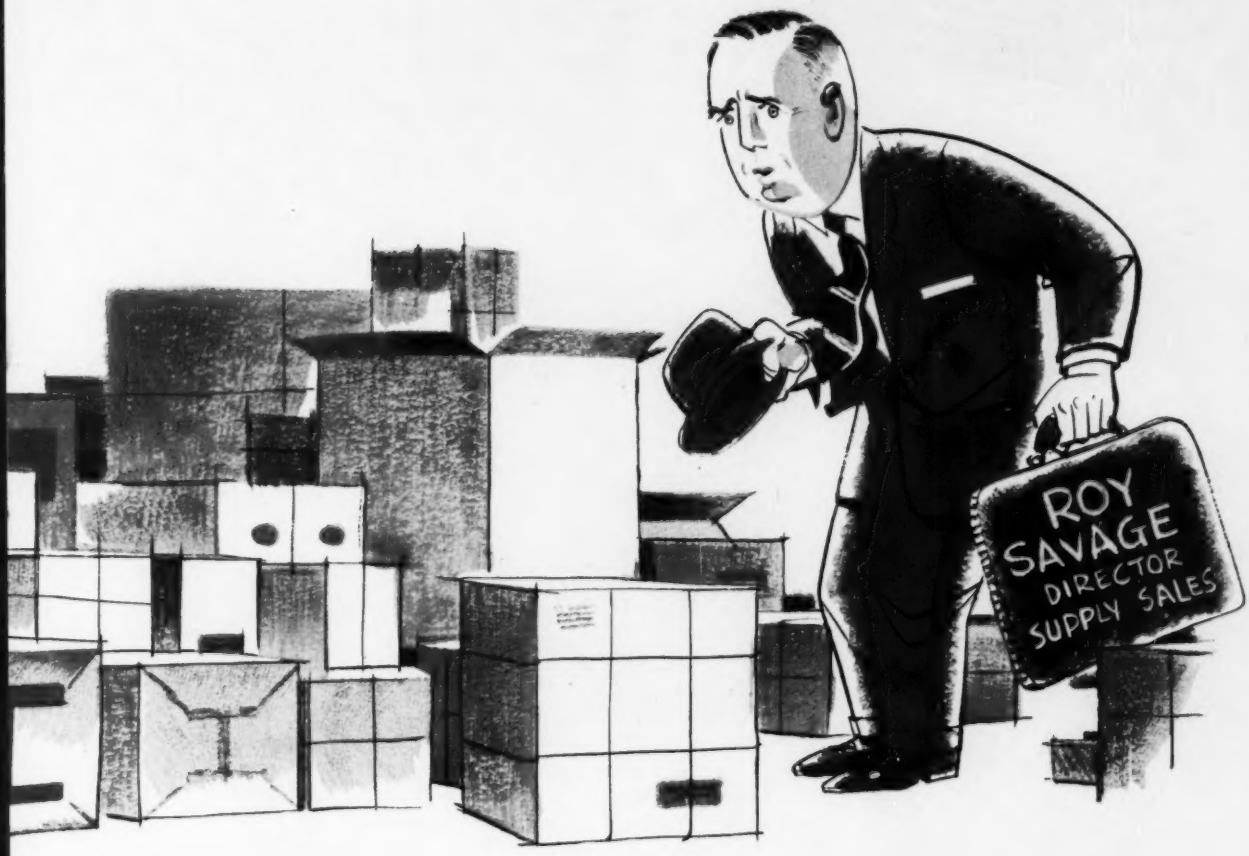
1620 THIRTEENTH STREET **RACINE, WISCONSIN**

"But, Roy, you said

AE Supply Orders must be

Shoeshine with your supply order? Some of our customers like Tiny's idea. But, that isn't quite what Roy meant when he said that each supply order must be handled in a friendly, courteous manner.

Even Tiny can understand this. AE expects to be in the telephone supply business for many, many years ahead. This means we must give you friendly, courteous service. It also means we must provide *prompt delivery* from a *large stock* of *famous brands*. Give us a call today. Let us prove again that—at AE, you get all 3.



handled in a courteous manner!"

at AE you get all 3

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LARGE STOCKS
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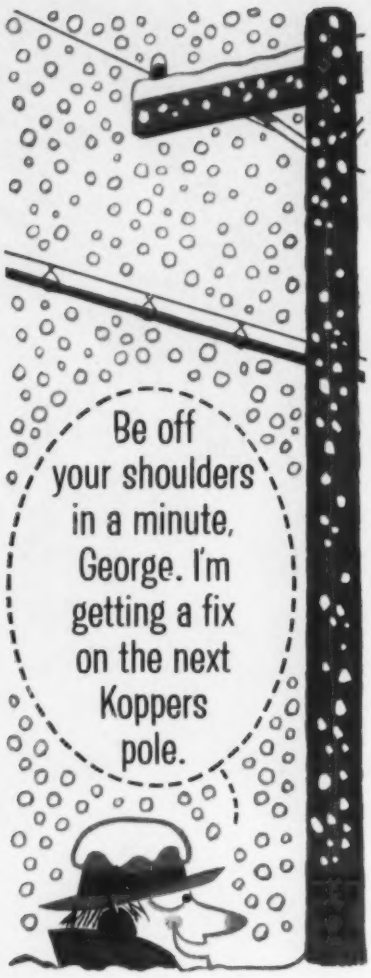
AUTOMATIC ELECTRIC

SUBSIDIARY OF GENERAL TELEPHONE & ELECTRONICS



C-32

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for rail or truck deliveries of POLES and CROSSARMS from plants and delivery yards
OFFICES IN PRINCIPAL CITIES
WOOD PRESERVING DIVISION
KOPPERS COMPANY, INC.
Pittsburgh 19, Pennsylvania

Obituary

JOHN RUCKER PORTER, 78, honorary chairman of the board and former president of Carolina Telephone & Telegraph Co., died on Mar. 28.

Mr. Porter was born near Lillard's Mill, Tenn., where he spent his boyhood. He attended Montgomery Bell Academy at Nashville.

He began his telephone career with Cumberland Telephone & Telegraph Co.

J. R. PORTER

(now a part of Southern Bell Telephone & Telegraph Co.) and served in various capacities with that company until 1918.

In 1918, he joined Home Telephone & Telegraph Co. of North Carolina, whose headquarters were at Henderson. He served as general manager of that company until the merger in 1926 of the Home Telephone & Telegraph Co. and the Carolina Telephone & Telegraph Co., when he became executive vice president of the combined companies which retained the name of Carolina Telephone & Telegraph Co.

Mr. Porter became president of the Carolina company in 1938, a position he held until 1945, when he was elected chairman of the board of directors. Although he retired from active service in 1947, he continued as chairman of the board of directors until May 1957, when he was elected honorary chairman of the board.

He also served as executive vice president, president, chairman of the board, and honorary chairman of the board of the Home Telephone & Telegraph Co. of Emporia, Va.

He was active in the formation and served as director for many years of the North Carolina Independent Telephone Association. Mr. Porter also served for several years as a member of the board of directors of the United States Independent Telephone Association, and also served one term as president in 1941-42.

Surviving are a daughter, Miss Elizabeth Porter of Tarboro; a son, Knox D., of Rocky Mount; three sisters, Mrs. Ella Mae Woods of East Ely, Nevada, Mrs. Hattie P. Jackson of Nashville, Tenn., and Miss Melville Porter of Nashville; and one grandson.

General of Northwest Names Marketing, Sales Manager

John Neraas, general commercial engineer for General Telephone Co. of the Northwest, has been promoted to the newly created position of marketing and sales manager.

A. J. Barran, president of General of the Northwest, said "the new department is being created to lend emphasis

JOHN NERAAS

to the company's sales and marketing programs which in turn will provide more comprehensive services and facilities to our customers."

Mr. Neraas was employed by General Telephone Co. of the Northwest in 1945 and since that time has gained valuable plant, engineering, commercial and administrative experience. His most recent assignment included overall responsibility for special services and communication arrangements to military installations.

A native of Spokane, he received his schooling in business administration at the University of Idaho.

Mr. Neraas will be assisted by Lyle Abbott, marketing analyst and Darrell White, general sales supervisor for the company.

The new assignments became effective Apr. 1.

TRENCHES

2¾" to 8" wide • Depths to 6'
Self-Propelled•Hydraulic Drive
Low Cost • Pays for Itself!

The economic Arps Model M-A Trench-Devil will handle most of your trenching jobs faster, easier and at lowest cost per foot of trench. For the largest percentage of ditching work — foundations, water services, underground wiring, gas lines, sprinkler systems — this heavy duty, one-man outfit will outdig larger units costing many times its low price. Get more information *now* on this and other famous Arps Trenchers for larger and smaller jobs. The Arps Corporation, New Holstein, Wis. Dept. T.

ARPS CORPORATION
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HALF-TRACKS • BULLDOZERS
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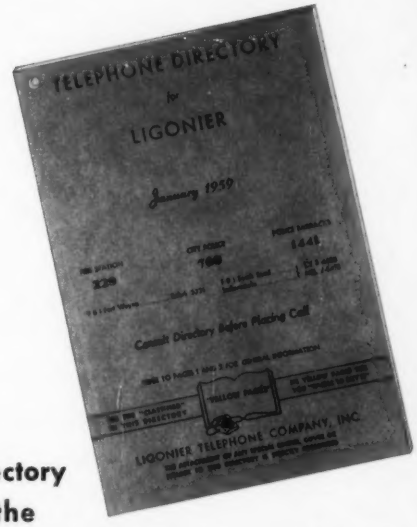

A Directory for the Ligonier Telephone Company, Inc.

Printed by

R. R. DONNELLEY & SONS COMPANY

350 East Twenty-second Street, Chicago 16

The CF&I Image assures quality

Galvanized Steel Strand

for Guy, Messenger & Ground Wires

The CF&I Image—giant symbol of dependable steel products—contributes to the ever-expanding industrial growth of America. And where telephone or utility lines spring up, you'll find the CF&I Image—for in the electrical and communications industries he stands for top-quality guy, messenger and ground wires.

To prevent pole leaning and power line sagging, use CF&I Galvanized Steel Strand. Made to customer specifications or to ASTM specifications A-122 or A-363, the steel strand is quality-controlled throughout every stage of production. That's why utilities rely on CF&I Galvanized Steel Strand to stand up under the most rugged conditions.

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CANADIAN REPRESENTATIVES AT: Calgary • Edmonton • Vancouver • Winnipeg

Electrical Expert Joins North As Consultant

Wilbur T. Harding, first and only technical director of the Aeronautical Accessories Research Laboratory, Wright Air Development Center, has been retained by North Electric Co. as a consultant for long-range technical matters and specialized engineering assistance.

W. T. HARDING

William Tucker, president of North Electric, Galion, O., manufacturer of tele-communications and automatic control equipment, says that Mr. Harding's extensive research and development experience in electrical and electronic engineering will add measurably to North's expanding engineering services, particularly in government and military areas.

Mr. Harding retired recently after 33 years of government service. For the past six years, he was civilian head of the aeronautical accessories laboratory which is part of the Air Research & Development Command of the USAF.

He was in charge of development of aeronautical electrical power equipment, training and base equipment, mechanical systems and ground support and check-out systems. He also served as contact between the airframe industry, component and subsystem manufacturers and Air Force users.

During World War II, at a time when planes returning from missions found impenetrable fogs over landing fields, he served as a consultant on improvement of England's airport runway lighting. When the Russians halted American ground transport and the Berlin Airlift was organized in 1948, Mr. Harding was again called by the government—to help set up a high-

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- It means money saved in maintenance and replacement
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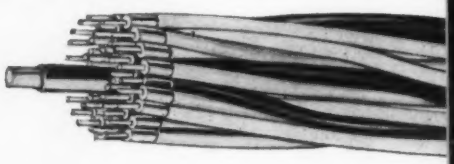
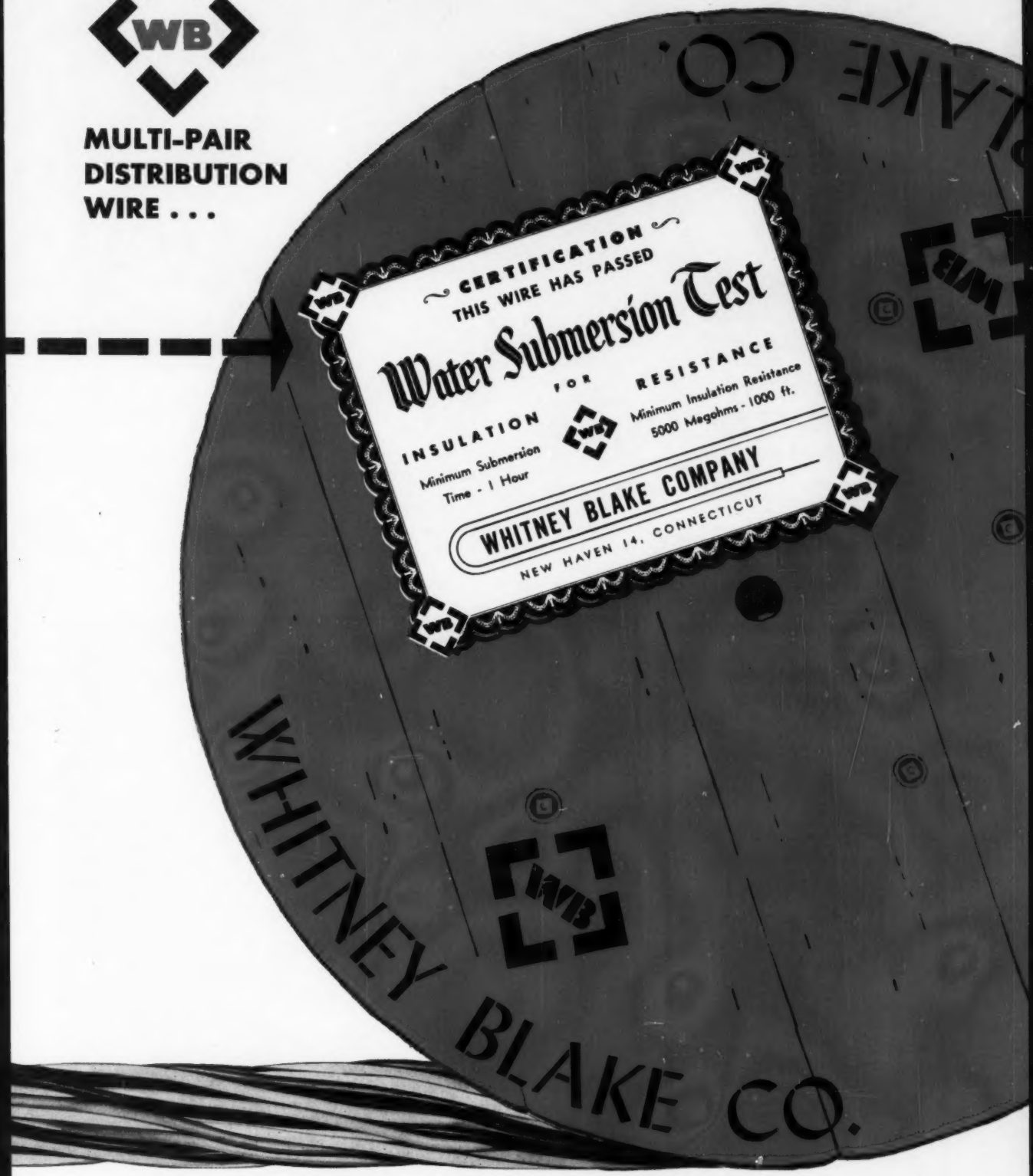


MULTI-PAIR DISTRIBUTION WIRE . . .



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Save Money in the Long Run

NATCO CLAY CONDUIT, economical to install and maintain, is the low cost way to give Underground Telephone Cables permanent protection. Available in a full line of shapes.

NATCO CORPORATION

327 Fifth Ave., Pittsburgh 22, Pa.

intensity approach lighting system for Tempelhof Airport at Berlin.

His efforts to organize a U. S.-U. K. industry advisory staff to exchange technical information and assist the U.S.A.F. and Royal Air Force gained him an international reputation. Mr. Harding has written more than a dozen technical publications.

He started his government career at McCook field in 1925 as an electrical engineer following graduation with a B.S. (electrical engineering) degree from Purdue University.

Two years later, he received his M.S. (physics) degree at Purdue. He was awarded an E.E. degree in 1932 and is a member of the A.I.E.E.

John R. Morrill Is Elected President of Hubbard

The election of John R. Morrill as president of Hubbard & Co., producer of electrical utility distribution fittings and hardware, has been announced. His new post was effective Apr. 1 following his resignation as general manager of the Evansville division of Bendix Westinghouse Automotive Air Brake Co.

Mr. Morrill succeeds Charles H. Dyson who will remain on the Hubbard & Co. board of directors.

He is an engineering graduate of

J. R. MORRILL

Stanford University, and served with the Lincoln Electric Co. of Cleveland, O., prior to joining Bendix Westinghouse.

Hubbard & Co., 116-year-old subsidiary of The Dyson Corp., operates four plants, two in Chicago and one each in Pittsburg and Oakland, Cal. Hubbard also operates one of the most modern high-voltage test laboratories in the world, completed in 1958 at McCook, Ill.

TELEPHONE TUMBLERS

- AWARDS
- PRESTIGE GIFTS
- SPECIALTIES

WALT BARBER *Advertising Specialties*

BOX 11911 • ATLANTA 5, GA.

Rochester (N. Y.) Telephone Corp. made a direct report to shareowners in four cities on Mar. 30 when its common stock was listed for trading on the New York Stock Exchange. From the members' gallery overlooking the trading floor, a telephone report of the listing was made by (left to right): William A. Kern, executive vice president of Rochester Telephone; Donald H. Campbell, president; Specialist William N. Vaughan, of Vaughan & Co., and G. Keith Funston, president of the exchange. On the receiving end of the calls were respectively: William Kranke, of Midland, Tex.; Mrs. Janet Gardner, of Los Angeles; Alonzo Green, of Vero Beach, Fla., and Mrs. Augusta Roecker, of Rochester, N. Y.

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Of poles, crossarms, and preservative treatments. Analysis of wood preservatives. Consultation and specification writing.
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B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

Cascade Pole Co., P.O. Box 743, Tacoma, Wash. — Creosoted Douglas Fir and Cedar Poles.

C. M. Christiansen Co.—Northern White Cedar Poles, Pentachlorophenol treated. Plant and Yards, Phelps, Wis.

Dierks Forests, Inc., Wood Preserving Division, 810 Whittington Ave., Hot Springs, Arkansas. Southern Pine select poles, all sizes and lengths, pressure-treated, creosote or penta. Also creosote-2% penta mixture. Prompt shipment.

Eppinger & Russell Co., 80—8th Avenue, New York 11, N. Y.—Creosoted Poles and Cross Arms. Plants: Jacksonville, Fla., Norfolk, Va., Eddington, Pa.

International Creosoting and Construction Co., Galveston, Texas.—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

International Paper Co., Wood Preserving Division, Sales—926 Grand Avenue, Kansas City, Mo.—Pressure-treated Southern Pine and Douglas Fir Poles. Creosote and Penta preservatives.

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Automatic Electric Sales Corp. announces the appointment of Ralph D. Hill Jr. to the newly created position of director of product planning.

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R. D. HILL JR.

various factors surrounding the introduction of new products, and contributions in the area of commercial planning for products of the future.

He was formerly administrative manager of the corporation's carrier and radio sales. He joined the company in 1954 as a carrier and radio staff engineer.

Prior to joining Automatic Electric Sales, he served in a variety of duties for 13 years with New Jersey Bell Telephone Co.

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"Corporations must proceed warily where retention of earnings is concerned lest they unwittingly hamper the willingness of stockholders to invest personal savings in new corporate security issues. Capital funds originating in depreciation and depletion accounting may well be subjected to the erosion of inflation, and this leads to the suggestion that at some point we must re-examine our tax laws."—DEAN O. BOWMAN, *co-ordinator of long-range planning, Crown Zellerbach Corp.*

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SOLICITATION OF PROPOSALS FOR THE PURCHASE OF THE VIRGIN ISLANDS TELEPHONE SYSTEM

Sealed proposals for the purchase, rebuilding, expansion, and subsequent operation of the telephone system now owned and operated by the Government of the Virgin Islands will be received until 2:00 p.m., E.S.T. on June 12, 1959, at Room 6514, Department of the Interior, Washington 25, D. C. The sealed envelope containing the proposal shall be clearly marked and bear the notation "Proposal for Purchase of the Virgin Island Telephone System."

Proposals are solicited by the Government of the Virgin Islands pursuant to Act No. 317 of the 2nd Legislature of the Virgin Islands, approved June 19, 1958.

A SOLICITATION OF PROPOSALS FOR THE PURCHASE OF THE VIRGIN ISLANDS GOVERNMENT TELEPHONE SYSTEM may be obtained by writing or calling at the Office of Territories, Department of the Interior, Washington 25, D. C. SECTION IV OF THE SOLICITATION, CONTENTS OF PROPOSAL, includes minimum requirements that must be included in proposals submitted.

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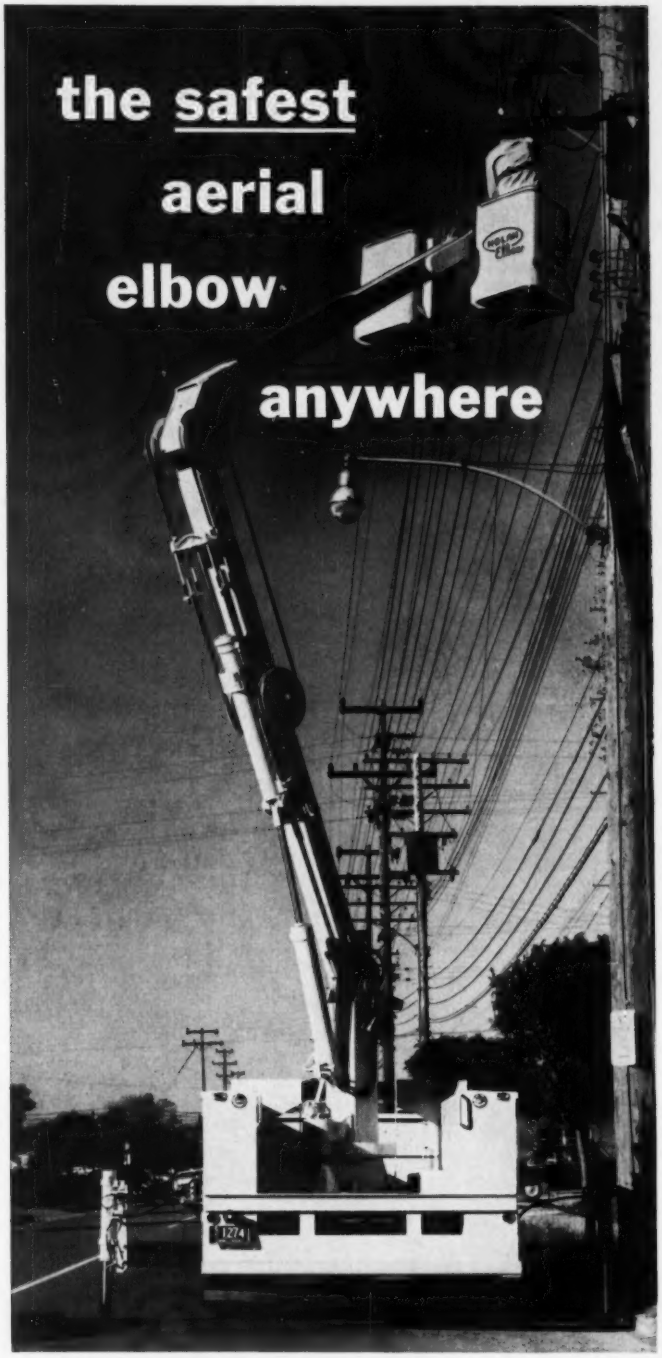
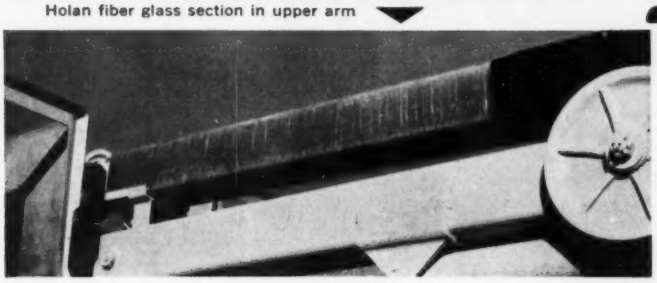


Holan fiber glass section in upper arm



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